



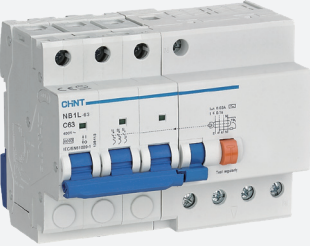



1. Product Overview

Product Scope

<p>Integrated RCBO</p>	 <p>NB1L N left 1PN 1~25A 6kA</p>	 <p>NB1L N right 1PN 2~40A 6kA/10kA</p>	 <p>NB1L 2P 6~40A 10kA</p>
<p>Add on type RCBO</p>	 <p>NB1L-40 1P+N, 2P, 3P, 3P+N, 4P 1~40A 10kA</p>	 <p>NB1L-63 1P+N, 2P, 3P, 3P+N, 4P 50A, 63A 6kA</p>	
<p>Slim RCBO</p>	 <p>NB1L-20 1P+N 6-20A 6kA</p>		



NB4LE-40H-F Residual Current Circuit Breaker (ELE)

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

30mA - additional protection against direct contact.

100mA - co-ordinated with the earth system according to the formula $I\Delta n < 50/R$, to provide protection against indirect contacts;

RCD Type F

- Increased protection due to the detection of mixed frequencies

- Higher load rating with DC residual currents up to 10 mA

- Reduction of nuisance tripping thanks to time delayed tripping and increased current withstand capability of 3 kA

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.

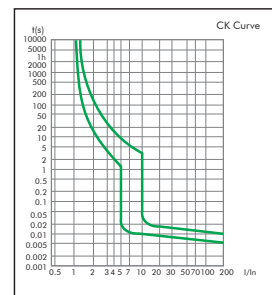
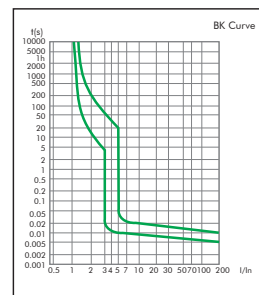
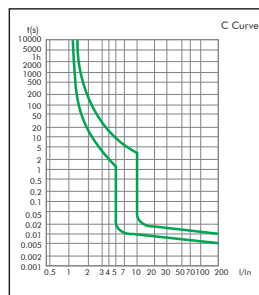
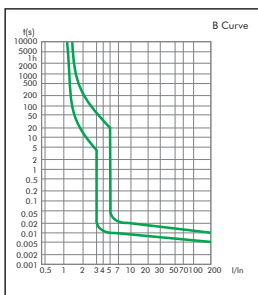


1.3 Approvals and certificates

CE, CB

2. Technical data

2.1 Curves



2.2

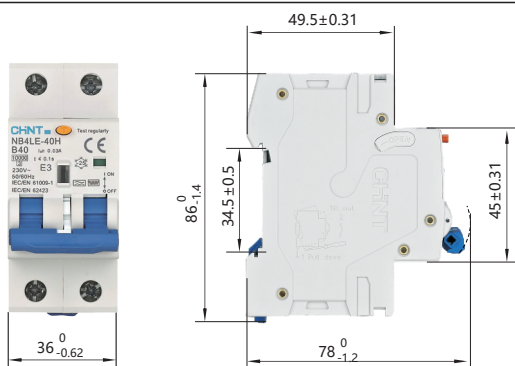
	Standard		IEC/EN 61009-1
Electrical features	Type (wave form of the earth leakage sensed)		F
	Thermo-magnetic release characteristic		B, C
	Rated current I _n	A	6, 10, 13, 16, 20, 25, 32, 40
	Poles		2P
	Rated voltage U _e	V	230/240
	Rated sensitivity I _{Δn}	A	0.03, 0.1
	Rated residual making and breaking capacity I _{Δm}	A	3,000
	Rated short-circuit capacity I _{cn}	A	10,000
	Break time under I _{Δn}	s	≤0.1
	Rated frequency	Hz	50/60
	Rated impulse withstand voltage (1.2/50)U _{imp}	kV	4
	Dielectric TEST voltage at ind. Freq. for 1min	kV	2
	Insulation voltage U _i	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 averages ≤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		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 °C

Temperature	-10°C	0°C	10°C	20°C	30°C	40°C	50°C	60°C
Temperature compensation coefficient of rated current	1.20	1.15	1.10	1.05	1.00	0.95	0.90	0.85

3. Overall and mounting dimensions (mm)



2P

NB4LE-40H	2P	C	16	30mA	A	10kA
Frame	Poles	Curve	Current(In)	Rated sensitivity (IΔn)	Leakage type	Breaking capacity
NB4LE-40H	2P	B BK C CK	6A~40A	30mA 100mA	F	10kA

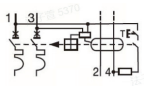
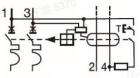
Diagram	Curve	Poles	In(A)	Icu(kA)	Ue(V)	IΔn(mA)	Leakage Type	Description	Code
	B	2P	6	10	AC230/240	30	F	NB4LE-40H 2P B6 30mA F 10kA	571567
	B	2P	10	10	AC230/240	30	F	NB4LE-40H 2P B10 30mA F 10kA	571568
	B	2P	13	10	AC230/240	30	F	NB4LE-40H 2P B13 30mA F 10kA	571569
	B	2P	16	10	AC230/240	30	F	NB4LE-40H 2P B16 30mA F 10kA	571570
	B	2P	20	10	AC230/240	30	F	NB4LE-40H 2P B20 30mA F 10kA	571571
	B	2P	25	10	AC230/240	30	F	NB4LE-40H 2P B25 30mA F 10kA	571572
	B	2P	32	10	AC230/240	30	F	NB4LE-40H 2P B32 30mA F 10kA	571573
	B	2P	40	10	AC230/240	30	F	NB4LE-40H 2P B40 30mA F 10kA	571574
	BK	2P	10	10	AC230/240	30	F	NB4LE-40H 2P BK10 30mA F 10kA	571575
	BK	2P	13	10	AC230/240	30	F	NB4LE-40H 2P BK13 30mA F 10kA	571576
	BK	2P	15	10	AC230/240	30	F	NB4LE-40H 2P BK15 30mA F 10kA	571577
	BK	2P	20	10	AC230/240	30	F	NB4LE-40H 2P BK20 30mA F 10kA	571578
	C	2P	6	10	AC230/240	30	F	NB4LE-40H 2P C6 30mA F 10kA	571579
	C	2P	10	10	AC230/240	30	F	NB4LE-40H 2P C10 30mA F 10kA	571580
	C	2P	13	10	AC230/240	30	F	NB4LE-40H 2P C13 30mA F 10kA	571581
	C	2P	16	10	AC230/240	30	F	NB4LE-40H 2P C16 30mA F 10kA	571582
	C	2P	20	10	AC230/240	30	F	NB4LE-40H 2P C20 30mA F 10kA	571583
	C	2P	25	10	AC230/240	30	F	NB4LE-40H 2P C25 30mA F 10kA	571584
	C	2P	32	10	AC230/240	30	F	NB4LE-40H 2P C32 30mA F 10kA	571585
	C	2P	40	10	AC230/240	30	F	NB4LE-40H 2P C40 30mA F 10kA	571586
	CK	2P	10	10	AC230/240	30	F	NB4LE-40H 2P CK10 30mA F 10kA	571587
	CK	2P	13	10	AC230/240	30	F	NB4LE-40H 2P CK13 30mA F 10kA	571588
	CK	2P	15	10	AC230/240	30	F	NB4LE-40H 2P CK15 30mA F 10kA	571589
	CK	2P	20	10	AC230/240	30	F	NB4LE-40H 2P CK20 30mA F 10kA	571590
	B	2P	6	10	AC230/240	100	F	NB4LE-40H 2P B6 100mA F 10kA	571591
	B	2P	10	10	AC230/240	100	F	NB4LE-40H 2P B10 100mA F 10kA	571592
	B	2P	13	10	AC230/240	100	F	NB4LE-40H 2P B13 100mA F 10kA	571593
	B	2P	16	10	AC230/240	100	F	NB4LE-40H 2P B16 100mA F 10kA	571594
	B	2P	20	10	AC230/240	100	F	NB4LE-40H 2P B20 100mA F 10kA	571595
	B	2P	25	10	AC230/240	100	F	NB4LE-40H 2P B25 100mA F 10kA	571596
	B	2P	32	10	AC230/240	100	F	NB4LE-40H 2P B32 100mA F 10kA	571597
	B	2P	40	10	AC230/240	100	F	NB4LE-40H 2P B40 100mA F 10kA	571598

Diagram	Curve	Poles	In(A)	Icu(kA)	Ue(V)	IΔn(mA)	Leakage Type	Description	Code
	BK	2P	10	10	AC230/240	100	F	NB4LE-40H 2P BK10 100mA F 10kA	571599
	BK	2P	13	10	AC230/240	100	F	NB4LE-40H 2P BK13 100mA F 10kA	571600
	BK	2P	15	10	AC230/240	100	F	NB4LE-40H 2P BK15 100mA F 10kA	571601
	BK	2P	20	10	AC230/240	100	F	NB4LE-40H 2P BK20 100mA F 10kA	571602
	C	2P	6	10	AC230/240	100	F	NB4LE-40H 2P C6 100mA F 10kA	571603
	C	2P	10	10	AC230/240	100	F	NB4LE-40H 2P C10 100mA F 10kA	571604
	C	2P	13	10	AC230/240	100	F	NB4LE-40H 2P C13 100mA F 10kA	571605
	C	2P	16	10	AC230/240	100	F	NB4LE-40H 2P C16 100mA F 10kA	571606
	C	2P	20	10	AC230/240	100	F	NB4LE-40H 2P C20 100mA F 10kA	571607
	C	2P	25	10	AC230/240	100	F	NB4LE-40H 2P C25 100mA F 10kA	571608
	C	2P	32	10	AC230/240	100	F	NB4LE-40H 2P C32 100mA F 10kA	571609
	C	2P	40	10	AC230/240	100	F	NB4LE-40H 2P C40 100mA F 10kA	571610
	CK	2P	10	10	AC230/240	100	F	NB4LE-40H 2P CK10 100mA F 10kA	571611
	CK	2P	13	10	AC230/240	100	F	NB4LE-40H 2P CK13 100mA F 10kA	571612
	CK	2P	15	10	AC230/240	100	F	NB4LE-40H 2P CK15 100mA F 10kA	571613
	CK	2P	20	10	AC230/240	100	F	NB4LE-40H 2P CK20 100mA F 10kA	571614