1. Product Overview

Product Scope

Integrated RCBO



NB1L N left
1PN
1~25A
6kA



NB1L N right
1PN
2~40A
6kA/10kA

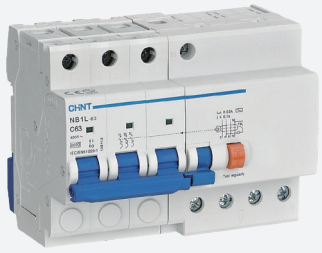


NB1L
2P
6~40A
10kA

Add on type RCBO



NB1L-40
1P+N, 2P, 3P, 3P+N, 4P
1~40A
10kA



NB1L-63
1P+N, 2P, 3P, 3P+N, 4P
50A, 63A
6kA

Slim RCBO



NB1L-20
1P+N
6-20A
6kA



NB2LE Residual Current Circuit Breaker (ELE)

1. General

The NB2LE residual current operated circuit breakers are suitable for lines with AC 50/60Hz, rated voltage 240V, rated current up to 40A and for purposes of residual current protection, overload and short circuit protection. When any personal electric shock occurs or the circuit leakage current exceeds the predetermined value, the residual current operated circuit breaker can automatically cut off the power supply in a very short period of time, so that the safety of persons and electrical equipment can be protected. The residual current operated circuit breaker can be used for infrequent conversion of lines under normal conditions, and applied under occasions such as industrial, and commercial, high-rise buildings and residential houses.

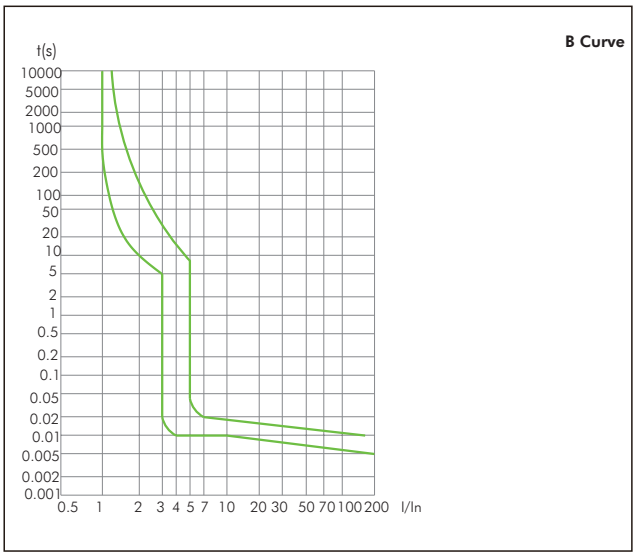
2. Type designation

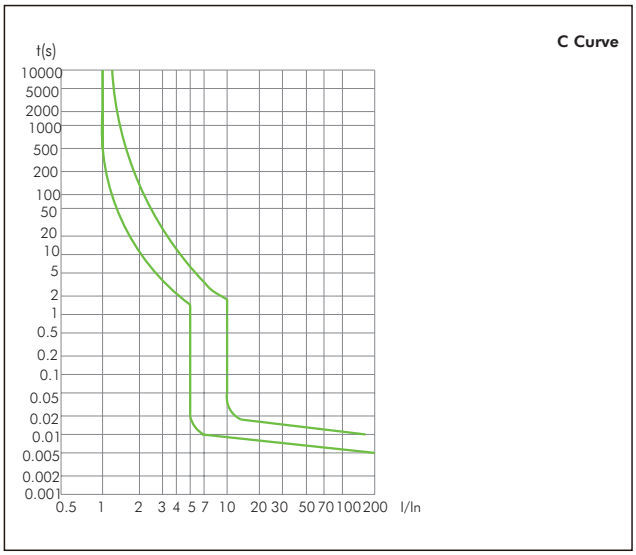
N B 2 LE / □-□

- Rated residual operating current
- Instantaneous trip type and rated current (A)
- Function Code (electronic residual current)
- Design sequence No.
- Miniature Circuit Breaker
- Company Code

3. Technical data

3.1 The tripping characteristic curves are as shown in Fig. 1.





3.2

	Standard		IEC/EN 61009-1
Main Specifications	Rated current In	A	6, 10, 16, 20, 25, 32, 40
	Classified by Type of Instantaneous Tripping		Type B: (3 ~ 5) In,Type C: (5 ~ 10) In
	Poles		1P + N
	Type(wave form of the earth leakage sensed)		Type AC, Type A
Technical Parameters	Rated voltage Ue	V	AC110V, AC230/240
	Frame size rated current Inm	A	40
	Rated residual operating current I △ n	A	0.03, 0.1, 0.3
	Rated residual non-operating current I △ no	A	0.015
	Rated short-circuit breaking capacity Icn	A	6000
	Rated residual making and breaking capacity I △ m	A	3000
	Electrical life		4000
	Mechanical life		20000
	Rated impuse withstand voltage Uimp	V	4000
	Connection		From top

3.3 The residual current breaking times

In(A)	I △ n(A)	Breaking time when the residual current assumes the following values (s)				
		I △ n	2 I △ n	5 I △ n	5A,10A,20A,50A,100A,200A,500A[a]	I △ t[b]
6~40	0.03	0.1	0.05	0.04	0.04	0.04

a.For tests of 5A,10A,20A,50A,100A,200A and 500A, the current values beyond the lower limit of over-current instantaneous tripping are not tested.
b.Tests are done when I △ t is equal to the lower limit current of over-current instantaneous tripping of type B and type C.

3.4 The over-current protection characteristics

No.	Rated current In (A)	Initial state	Test current (A)	Specified time (t)	Expected result	Remarks
a	6~40	Cold state	1.13In	t≥1h	Non-tripping	
b		Immediately after sequence a	1.45In	t < h	Tripping	Increase to the specified current within 5s after test item a.
c		Cold state	2.55In	1s < t < 60s	Tripping	
d		Cold state	3In	t≥0.1s	Non-tripping	Type B
			5In	t < 0.1s	Tripping	
			5In	t≥0.1s	Non-tripping	Type C
			10In	t < 0.1s	Tripping	

Rated current In (A)	Temperature compensation coefficient under various operational temperature										
	-25℃	-20℃	-10℃	0℃	10℃	20℃	30℃	40℃	50℃	60℃	70℃
6-40	1.27	1.25	1.20	1.15	1.10	1.05	1.00	0.95	0.90	0.85	0.83

4. Overall and mounting dimensions (mm)

The product shall be mounted using mounting rail of 35-7.5 section steel.
The overall and mounting dimensions are as shown in Fig. 2 and Fig. 3.

Fig. 2 Overall and installation dimensions

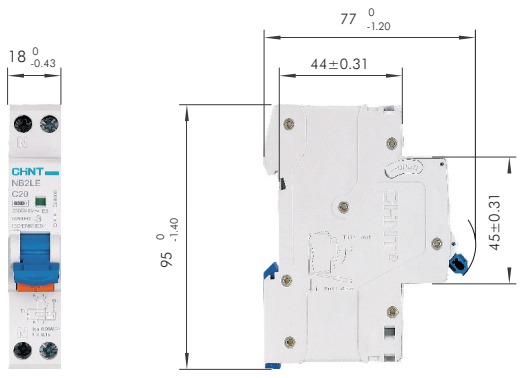
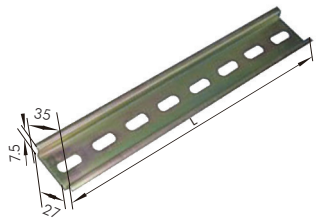


Fig. 3 Mounting rail size



5. Ordering information

5.1 When ordering, the following information must be indicated:

a. Product type and description, such as: NB2LE residual current operated circuit breaker;
b. Rated current, such as: 25A;
c. Instantaneous tripping type, such as: Type C;
d. Rated residual operating current, such as: 0.03A
e. Operating conditions when containing DC component, such as: Type A;
f. Ordering quantity, such as: 90 units.

5.2 Ordering examples: NB2LE residual current operated circuit breaker C25, 0.03A, A type, 90 units.

NB2LE	1P+N	6kA	B	6	30mA	AC
Frame	**Poles**	**Breaking capacity**	**Curve**	**Current(In)**	**Rated sensitivity (IΔn)**	**Leakage curve**
NB2LE	1P+N	6kA	B C	6A~40A	30mA 100mA 300mA	A AC

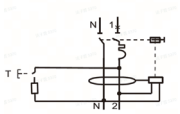
Diagram	Curve	Poles	In(A)	Icu(kA)	Ue(V)	IΔn(mA)	Leakage type	Description	Code
	B	1P+N	6	6	AC230/240	30	A	NB2LE 1P+N 6kA B6 30mA A	689015
	B	1P+N	6	6	AC230/240	100	A	NB2LE 1P+N 6kA B6 100mA A	324481
	B	1P+N	6	6	AC230/240	300	A	NB2LE 1P+N 6kA B6 300mA A	324510
	B	1P+N	10	6	AC230/240	30	A	NB2LE 1P+N 6kA B10 30mA A	689016
	B	1P+N	10	6	AC230/240	100	A	NB2LE 1P+N 6kA B10 100mA A	324483
	B	1P+N	10	6	AC230/240	300	A	NB2LE 1P+N 6kA B10 300mA A	324511
	B	1P+N	16	6	AC230/240	30	A	NB2LE 1P+N 6kA B16 30mA A	689017
	B	1P+N	16	6	AC230/240	100	A	NB2LE 1P+N 6kA B16 100mA A	324484
	B	1P+N	16	6	AC230/240	300	A	NB2LE 1P+N 6kA B16 300mA A	324513
	B	1P+N	20	6	AC230/240	30	A	NB2LE 1P+N 6kA B20 30mA A	689018
	B	1P+N	20	6	AC230/240	100	A	NB2LE 1P+N 6kA B20 100mA A	324485
	B	1P+N	20	6	AC230/240	300	A	NB2LE 1P+N 6kA B20 300mA A	324512
	B	1P+N	25	6	AC230/240	30	A	NB2LE 1P+N 6kA B25 30mA A	689019
	B	1P+N	25	6	AC230/240	100	A	NB2LE 1P+N 6kA B25 100mA A	324486
	B	1P+N	25	6	AC230/240	300	A	NB2LE 1P+N 6kA B25 300mA A	324514
	B	1P+N	32	6	AC230/240	30	A	NB2LE 1P+N 6kA B32 30mA A	252636
	B	1P+N	32	6	AC230/240	100	A	NB2LE 1P+N 6kA B32 100mA A	324487
	B	1P+N	32	6	AC230/240	300	A	NB2LE 1P+N 6kA B32 300mA A	324515
	B	1P+N	40	6	AC230/240	30	A	NB2LE 1P+N 6kA B40 30mA A	252637
	B	1P+N	40	6	AC230/240	100	A	NB2LE 1P+N 6kA B40 100mA A	324488
	B	1P+N	40	6	AC230/240	300	A	NB2LE 1P+N 6kA B40 300mA A	324516
	C	1P+N	6	6	AC230/240	30	A	NB2LE 1P+N 6kA C6 30mA A	689005
	C	1P+N	6	6	AC230/240	100	A	NB2LE 1P+N 6kA C6 100mA A	324489
	C	1P+N	6	6	AC230/240	300	A	NB2LE 1P+N 6kA C6 300mA A	324517
	C	1P+N	10	6	AC230/240	30	A	NB2LE 1P+N 6kA C10 30mA A	689006
	C	1P+N	10	6	AC230/240	100	A	NB2LE 1P+N 6kA C10 100mA A	324490
	C	1P+N	10	6	AC230/240	300	A	NB2LE 1P+N 6kA C10 300mA A	324518
	C	1P+N	16	6	AC230/240	30	A	NB2LE 1P+N 6kA C16 30mA A	689007
	C	1P+N	16	6	AC230/240	100	A	NB2LE 1P+N 6kA C16 100mA A	324491
	C	1P+N	16	6	AC230/240	300	A	NB2LE 1P+N 6kA C16 300mA A	324519
	C	1P+N	20	6	AC230/240	30	A	NB2LE 1P+N 6kA C20 30mA A	689008
	C	1P+N	20	6	AC230/240	100	A	NB2LE 1P+N 6kA C20 100mA A	324492
	C	1P+N	20	6	AC230/240	300	A	NB2LE 1P+N 6kA C20 300mA A	324520
	C	1P+N	25	6	AC230/240	30	A	NB2LE 1P+N 6kA C25 30mA A	689009
	C	1P+N	25	6	AC230/240	100	A	NB2LE 1P+N 6kA C25 100mA A	324493
	C	1P+N	25	6	AC230/240	300	A	NB2LE 1P+N 6kA C25 300mA A	324521

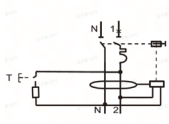
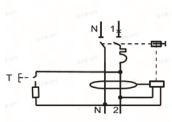
Diagram	Curve	Poles	In(A)	Icu(kA)	Ue(V)	IΔn(mA)	Leakage type	Description	Code
	C	1P+N	32	6	AC230/240	30	A	NB2LE 1P+N 6kA C32 30mA A	252638
	C	1P+N	32	6	AC230/240	100	A	NB2LE 1P+N 6kA C32 100mA A	324494
	C	1P+N	32	6	AC230/240	300	A	NB2LE 1P+N 6kA C32 300mA A	324522
	C	1P+N	40	6	AC230/240	30	A	NB2LE 1P+N 6kA C40 30mA A	252639
	C	1P+N	40	6	AC230/240	100	A	NB2LE 1P+N 6kA C40 100mA A	324495
	C	1P+N	40	6	AC230/240	300	A	NB2LE 1P+N 6kA C40 300mA A	324523
	B	1P+N	6	6	AC230/240	30	AC	NB2LE 1P+N 6kA B6 30mA AC	689010
	B	1P+N	6	6	AC110	30	AC	NB2LE 1P+N 6kA B6 30mA AC 110V	297322
	B	1P+N	6	6	AC230/240	100	AC	NB2LE 1P+N 6kA B6 100mA AC	324468
	B	1P+N	6	6	AC230/240	300	AC	NB2LE 1P+N 6kA B6 300mA AC	324496
	B	1P+N	10	6	AC230/240	30	AC	NB2LE 1P+N 6kA B10 30mA AC	689011
	B	1P+N	10	6	AC110	30	AC	NB2LE 1P+N 6kA B10 30mA AC 110V	297323
	B	1P+N	10	6	AC230/240	100	AC	NB2LE 1P+N 6kA B10 100mA AC	324469
	B	1P+N	10	6	AC230/240	300	AC	NB2LE 1P+N 6kA B10 300mA AC	324497
	B	1P+N	16	6	AC230/240	30	AC	NB2LE 1P+N 6kA B16 30mA AC	689012
	B	1P+N	16	6	AC110	30	AC	NB2LE 1P+N 6kA B16 30mA AC 110V	297324
	B	1P+N	16	6	AC230/240	100	AC	NB2LE 1P+N 6kA B16 100mA AC	324471
	B	1P+N	16	6	AC230/240	300	AC	NB2LE 1P+N 6kA B16 300mA AC	324498
	B	1P+N	20	6	AC230/240	30	AC	NB2LE 1P+N 6kA B20 30mA AC	689013
	B	1P+N	20	6	AC230/240	100	AC	NB2LE 1P+N 6kA B20 100mA AC	324470
	B	1P+N	20	6	AC230/240	300	AC	NB2LE 1P+N 6kA B20 300mA AC	324499
	B	1P+N	25	6	AC230/240	30	AC	NB2LE 1P+N 6kA B25 30mA AC	689014
	B	1P+N	25	6	AC230/240	100	AC	NB2LE 1P+N 6kA B25 100mA AC	324472
	B	1P+N	25	6	AC230/240	300	AC	NB2LE 1P+N 6kA B25 300mA AC	324501
	B	1P+N	32	6	AC230/240	30	AC	NB2LE 1P+N 6kA B32 30mA AC	252632
	B	1P+N	32	6	AC230/240	100	AC	NB2LE 1P+N 6kA B32 100mA AC	324474
	B	1P+N	32	6	AC230/240	300	AC	NB2LE 1P+N 6kA B32 300mA AC	324500
	B	1P+N	40	6	AC230/240	30	AC	NB2LE 1P+N 6kA B40 30mA AC	252633
	B	1P+N	40	6	AC230/240	100	AC	NB2LE 1P+N 6kA B40 100mA AC	324473
	B	1P+N	40	6	AC230/240	300	AC	NB2LE 1P+N 6kA B40 300mA AC	324502
	C	1P+N	6	6	AC230/240	30	AC	NB2LE 1P+N 6kA C6 30mA AC	689000
	C	1P+N	6	6	AC110	30	AC	NB2LE 1P+N 6kA C6 30mA AC 110V	297325
	C	1P+N	6	6	AC230/240	100	AC	NB2LE 1P+N 6kA C6 100mA AC	324475
	C	1P+N	6	6	AC230/240	300	AC	NB2LE 1P+N 6kA C6 300mA AC	324503
	C	1P+N	10	6	AC230/240	30	AC	NB2LE 1P+N 6kA C10 30mA AC	689001
	C	1P+N	10	6	AC110	30	AC	NB2LE 1P+N 6kA C10 30mA AC 110V	297326
	C	1P+N	10	6	AC230/240	100	AC	NB2LE 1P+N 6kA C10 100mA AC	324476
	C	1P+N	10	6	AC230/240	300	AC	NB2LE 1P+N 6kA C10 300mA AC	324504
	C	1P+N	16	6	AC230/240	30	AC	NB2LE 1P+N 6kA C16 30mA AC	689002
	C	1P+N	16	6	AC110	30	AC	NB2LE 1P+N 6kA C16 30mA AC 110V	297327
	C	1P+N	16	6	AC230/240	100	AC	NB2LE 1P+N 6kA C16 100mA AC	324477
	C	1P+N	16	6	AC230/240	300	AC	NB2LE 1P+N 6kA C16 300mA AC	324505
	C	1P+N	20	6	AC230/240	30	AC	NB2LE 1P+N 6kA C20 30mA AC	689003

Diagram	Curve	Poles	In(A)	Icu(kA)	Ue(V)	IΔn(mA)	Leakage type	Description	Code
	C	1P+N	20	6	AC230/240	100	AC	NB2LE 1P+N 6kA C20 100mA AC	324478
	C	1P+N	20	6	AC230/240	300	AC	NB2LE 1P+N 6kA C20 300mA AC	324506
	C	1P+N	25	6	AC230/240	30	AC	NB2LE 1P+N 6kA C25 30mA AC	689004
	C	1P+N	25	6	AC230/240	100	AC	NB2LE 1P+N 6kA C25 100mA AC	324479
	C	1P+N	25	6	AC230/240	300	AC	NB2LE 1P+N 6kA C25 300mA AC	324507
	C	1P+N	32	6	AC230/240	30	AC	NB2LE 1P+N 6kA C32 30mA AC	252634
	C	1P+N	32	6	AC230/240	100	AC	NB2LE 1P+N 6kA C32 100mA AC	324480
	C	1P+N	32	6	AC230/240	300	AC	NB2LE 1P+N 6kA C32 300mA AC	324508
	C	1P+N	40	6	AC230/240	30	AC	NB2LE 1P+N 6kA C40 30mA AC	252635
	C	1P+N	40	6	AC230/240	100	AC	NB2LE 1P+N 6kA C40 100mA AC	324482
	C	1P+N	40	6	AC230/240	300	AC	NB2LE 1P+N 6kA C40 300mA AC	324509
		1P+N						NB2LE 1P+N 6kA B6 30mA A 110V	
		1P+N						NB2LE 1P+N 6kA B10 30mA A 110V	
		1P+N						NB2LE 1P+N 6kA B16 30mA A 110V	
		1P+N						NB2LE 1P+N 6kA C6 30mA A 110V	
		1P+N						NB2LE 1P+N 6kA C10 30mA A 110V	
		1P+N						NB2LE 1P+N 6kA C16 30mA A 110V	