

Shanghai Liangxin Electrical Co., Ltd.

PRODUCT SPECIFICATION

NDB1LE-63 Type B

Residual Current Circuit Breaker with Overcurrent Protection

(IPD-ENG-DEV-T22 A2 2023-03-14)

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Approved	<u>张井阳</u>	Date	<u>2023-08-01</u>

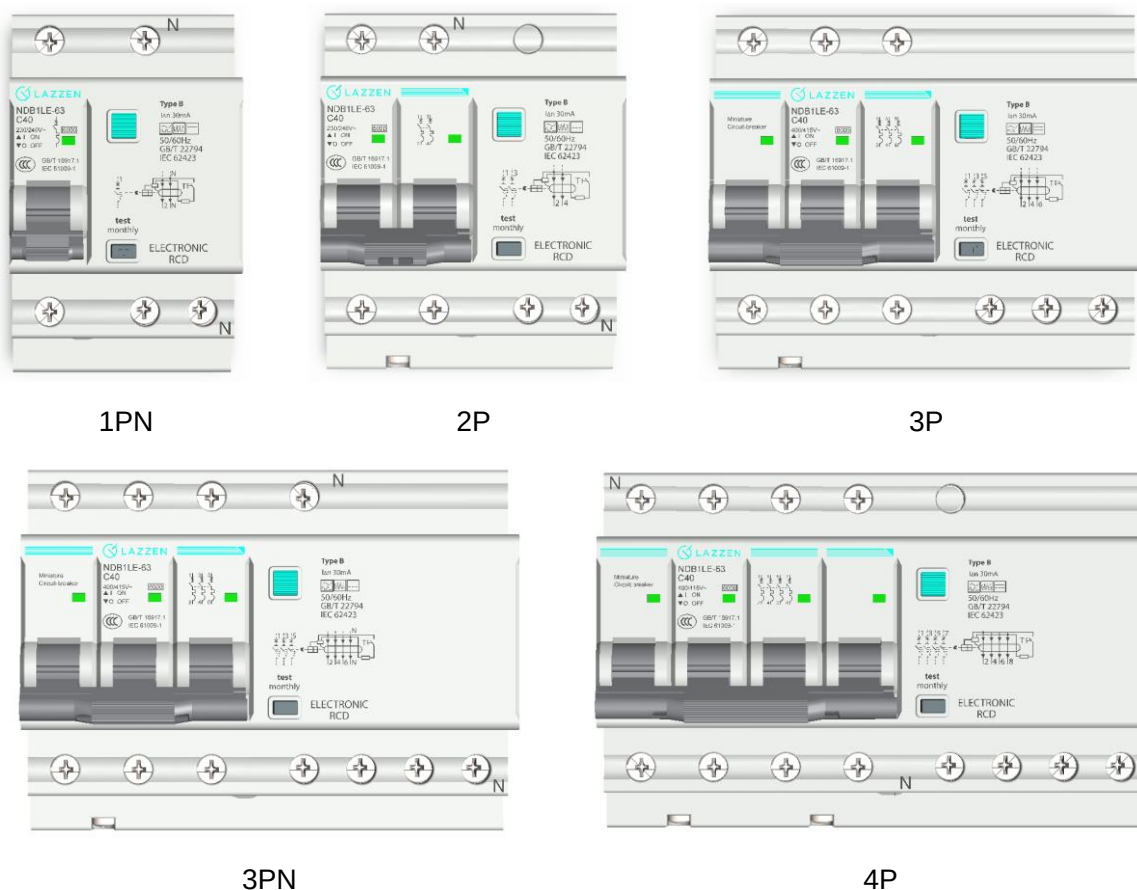
Revision information					
Version	Revised contents and reasons	Date	Prepared	Reviewed	Approved
0	Added	2023/08/01	Lin Chen	Yang Wei	Zhang Jingyang

1 Application

NDB1LE-63 type B residual current circuit breaker with overcurrent protection provide protection for sinusoidal AC residual current, pulsating DC residual current, composite residual current, and smooth DC residual current at frequencies up to 1kHz, applicable to new energy, charging station, intelligent building, industrial control and other occasions where frequency conversion technology is used. NDB1LE-63 type B residual current circuit breaker with overcurrent protection (type B RCBO) has the following functions:

- Short circuit protection
- Overload protection
- Residual current protection (type B)
- Isolation (1PN, 3PN not applicable)

2 Product pictures (subject to specific physical effects)



3 Product model

ND	B	1	L	E	-	63	<u> </u>	<u> </u>	/	<u> </u>	/	<u> </u>	/	<u> </u>
1	2	3	4	5	6		7	8		9		10		11

Item	Parameter type	NDB1LE-63
1	Enterprise code	ND
2	Product code	B: Breaker
3	Design code	1
4	Symbol 1	L: Residual current circuit breaker
5	Symbol 2	E: Electronic
6	Frame size (A)	63
7	Instantaneous tripping type	C, D
8	Rate current (A)	6, 10, 16, 20, 25, 32, 40, 50, 63
9	Pole	1PN, 2=2P, 3=3P, 3PN, 4=4P
10	Rated residual operating current	30mA
11	Type of residual tripping current	B

4 Main technical parameters

4.1 Electrical parametes

NDB1LE-63 type B RCBO main technical parameters

Standard	GB/T 22794, IEC 62423, EN 62423	
Certificate	CCC, CB, CE, TUV	
Number of product poles	1PN (N pole continuous), 2P	3P, 3PN (N pole continuous), 4P
Rated operational voltage Ue (V)	AC230/240	AC400/415
Rated insulation voltage Ui (V)	500	
Rated impulse withstand voltage Uimp (kV)	4	
Residual tripping current type	B	
Instantaneous tripping type	Type C (6A~63A), Type D (6A~40A)	
Rated current In (A)	6, 10, 16, 20, 25, 32, 40, 50, 63	
Icu (kA effective value)	6	
Ics (kA effective value)	6	
Rated residual operating current $I_{\Delta n}$ (mA)	30	
Rated frequency (Hz)	50/60	
Electrical life	10000	
mechanical life	20000	

4.2 Other parameters

- Isolating function (1PN, 3PN not applicable)
- Leakage visualization
- Wiring
 - Tunnel type wiring mode
 - Wiring capacity: Copper cable 1~25mm²
 - Standard torsional moment: 2.0N.m

- Protection class

- Protection class of the circuit breaker body: IP20
- To be installed in the distribution box: IP40

5 Working conditions

- Ambient temperature: $-25^{\circ}\text{C}\sim+60^{\circ}\text{C}$
- Storage ambient temperature: $-40^{\circ}\text{C}\sim+80^{\circ}\text{C}$
- Damp heat resistance: When the ambient air temperature is 55°C , the relative air humidity is $\leq 95\%$
- No more than 2000m, in case of use at the higher altitude, refer to the requirements of the miniature circuit breaker for derating. Refer to GB/T 20645 Special environmental conditions technical requirements for low voltage apparatus used in plateau
- Pollution degree: 2
- Can withstand the effects of salt mist and oil mist
- In a medium without explosion risk, and where the medium is not sufficient to corrode metals and damage insulation with gases and conductive dust
- In a place where there is no rain or snow invasion

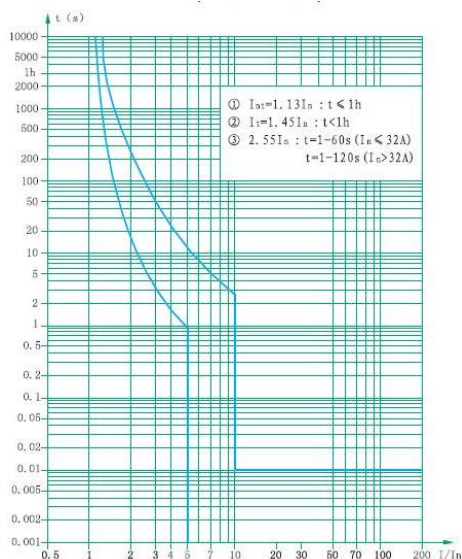
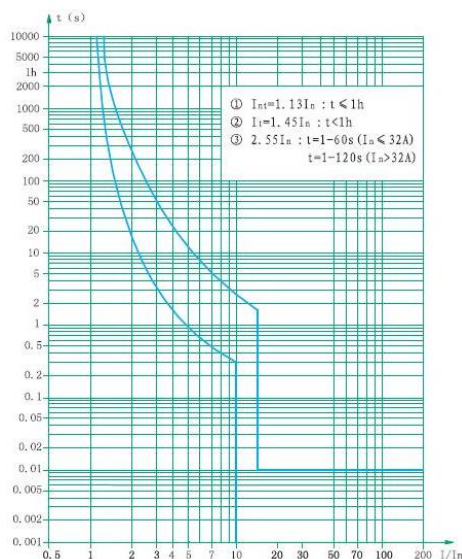
6 Time-current curves

- Type C curve

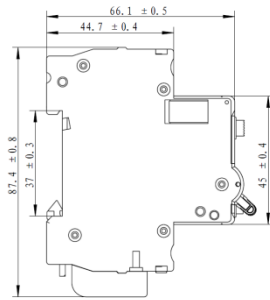
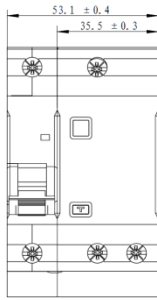
- Protect the conventional load and distribution cable
- Rated current: 6A~63A
- Tripping characteristics: Instantaneous tripping range $5I_n\sim 10I_n$

- Type D curve

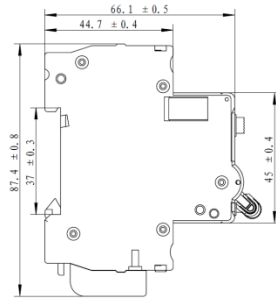
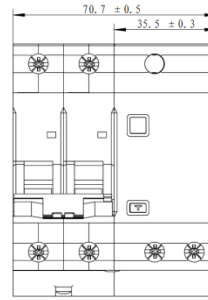
- Protection of industrial power distribution system
- Rated current: 6A~40A
- Tripping characteristics: Instantaneous tripping range $10I_n\sim 14I_n$

Type C ($5I_n\sim 10I_n$)Type D ($10I_n\sim 14I_n$)

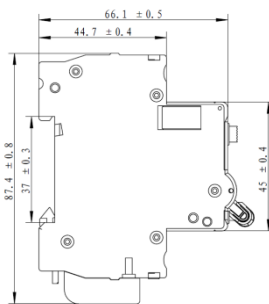
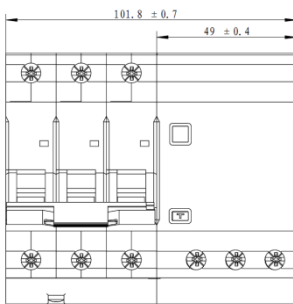
7 Dimensions



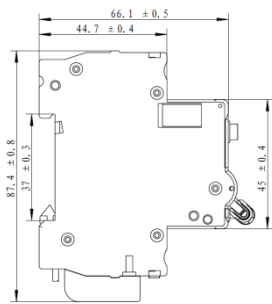
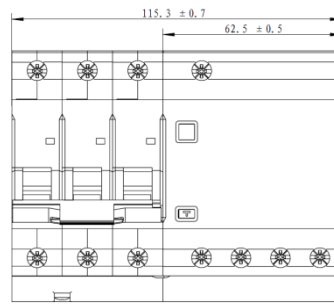
1PN



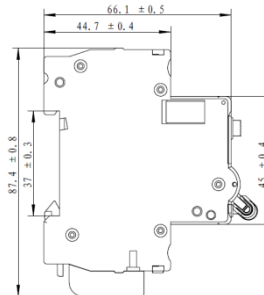
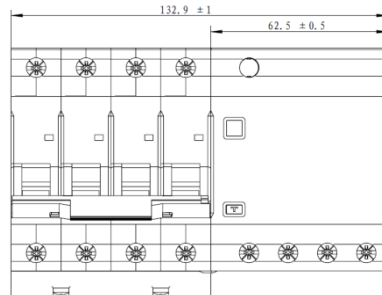
2P



3P



3PN



4P

8 Installation

It can be easily installed on the TH35mm×7.5 standard guide.

9 Packaging and storage

The maximum packaging quantity (1PN product: 4 pieces/box, 2P product: 3 pieces/box, 3P/3PN product: 2 pieces/box, 4P product: 1 piece/box), 12 boxes/box, packaged products should be stored in a warehouse with air circulation and relative humidity not exceeding 80%, temperature not exceeding +80°C, and not lower than -40°C. Store in a warehouse without acidic, alkaline, or other corrosive gases in the surrounding air. Under the above conditions, the storage period shall not exceed 3 years from the production date.

10 RoHS compliance

NDB1LE-63 type B RCBO products are in compliance with Directive 2011/65/EU and (EU) 2015/863 on the restriction of the use of certain hazardous substances in electrical and electronic equipment.

11 Notice

- 1) A user must be responsible for addressing a product issue that occurs because the user disassembles the product without approval;
- 2) It fails to provide protection for the electric shock caused due to two phases of the contacted lines to be protected;
- 3) Do not test the insulation resistance of the product or carry out power frequency withstand voltage tests directly or indirectly with a megger or similar devices on the product so as to avoid damage to the product. If required by users, our company can provide an effective proof of the conformance test;
- 4) In case of insulation resistance test on the project line, do not connect the product to avoid misunderstanding of the product quality or damage to the circuit board;
- 5) Please connect the power supply to the LINE terminal and the load terminal to the load wiring, do not reverse the connection, otherwise pressing the detection button or causing leakage current in the circuit will damage the product;
- 6) Wiring must be reliable to prevent the malfunction of the leakage circuit breaker or terminal burning damage due to the abnormal heat generation on the terminal;
- 7) Carry out a monthly stimulated test on the current leakage. Namely, press the test button to make the circuit breaker act with the aim to test proper operation of the circuit breaker, and replace the abnormal products in a timely manner;
- 8) For automatic disconnection of the leakage circuit breaker, analyze fault reasons for the line or equipment.