

Shanghai Liangxin Electrical Co., Ltd.

PRODUCT SPECIFICATION

NDB2LE-40

Residual Current Operated Circuit-breakers With Integral Overcurrent Protection

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

Prepared

Date

Reviewed

Date

Approved

Date

Revision information					
Version	Revised contents and reasons	Date	Prepared	Reviewed	Approved
3	Add “ Product certification and Executive Standards”	20220922	Guojun Xu	Min Xu	Hui Duan
4	Add D tyep	20230113	Guojun Xu	Hongbo Yu	Zhiqiang Huo
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4	Add D tyep	20230113	Guojun Xu	Hongbo Yu	Zhiqiang Huo
5	Corrected	20230412	Guojun Xu	Hongbo Yu	Zhiqiang Huo
6	Outline drawing changed and product picture changed	20230630	Guojun Xu	Hongbo Yu	Zhiqiang Huo

1 Application

- Short-circuit protection
- Overload protection
- Current leakage
- Isolation

The NDB2LE-40 series of residual current action circuit breakers provide the ground leakage, direct or indirect electric shock by human body and other faults protection, which are applicable to the low-voltage terminal distribution in the industry, civil buildings, energy, communication, infrastructure and other fields.

2 Product pictures(The picture is for reference only, subject to the real object)



1P+N

3 Product model

ND B 2 L E - 40 □ □ □ /□ /□

1 2 3 4 5 6 7 8 9 10 11

Item	Parameter type	
1	Brand code	LAZZEN
2	Product code	B
3	Design code	2
4	Earth leakage protection	L
5	Electromagnetic type	E
6	Frame rating(A)	40
7	Instantaneous tripping characteristic	B, C, D
8	Rated current(A)	2*, 4, 6, 10, 16, 20, 25, 32, 40
9	Poles	Empty=1P+N
10	Rated residual operating	30, 100, 300

	current(mA)	
11	Residual current operating characteristic	A type, AC type

*Note:Only Curve C is available for 2A.

4 Main technical parameters

4.1 Electrical parameters

Table1: NDB2LE-40 main electrical parameters

	
Product Name	NDB2LE-40
Standard reference	GB/T16917.1, IEC61009-1
Product certification	CCC, CB
Number of poles	1P+N
Rated working voltage Ue(V)	AC230/240
Rated frequency(Hz)	50/60
Rated insulation voltage Ui(V)	500
Rated impulse withstand voltage (kV)	4
Instantaneous tripping characteristic	B, C, D
Rated current In(A)	2*, 4, 6, 10, 16, 20, 25, 32, 40
Rated residual current	30mA, 100 mA, 300 mA
Residual current operating characteristic	AType, ACType
Rated breaking capacity (kA)	6
Rated service short-circuit breaking capacity (kA)	6
Electrical life	10000 times
Mechanical life	10000 times

*Note:Only Curve C is available for 2A.

4.2 Other parameters

- Isolation function
- Leakage is visible
- Wiring
- Tunnel type of wiring terminal
- Connection area:1mm²~16mm²
- Rated wiring torque:1.2N•m

5 Working conditions

5.1 Working condition

- Altitude: $\leq 2000\text{m}$
- Ambient temperature: $-25^{\circ}\text{C} \sim +60^{\circ}\text{C}$
- Resistant to the humid air (moisture resistance): The humidity is 90%-96% and 95%-100% at 55°C and 25°C respectively.
- Resistant to salt mist and oil mist.
- Service place without explosive media, gas and dust which are corrosive and conductive.
- A place free from rain and snow.

5.2 Temperature derating

Correcting current (A) Rated current (A) Ambient temperature (°C)	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	15
2	2.45	2.41	2.38	2.35	2.32	2.29	2.26	2.23	2.2	2.17	2.13	2.1
3	3.97	3.89	3.83	3.76	3.70	3.64	3.57	3.50	3.44	3.37	3.30	3.22
4	4.94	4.87	4.81	4.75	4.68	4.62	4.55	4.49	4.42	4.35	4.29	4.22
6	7.96	7.70	7.58	7.46	7.34	7.21	7.09	6.96	6.83	6.70	6.56	6.42
10	14.15	13.89	13.62	13.35	13.07	12.81	12.53	12.23	11.93	11.63	11.33	11.01
16	21.10	20.78	20.43	20.08	19.75	19.40	19.05	18.70	18.33	17.96	17.58	17.20
20	26.04	25.67	25.28	24.88	24.47	24.06	23.64	23.22	22.78	22.34	21.89	21.43
25	32.91	32.21	31.72	31.22	30.70	30.18	29.65	29.10	28.55	27.98	27.41	26.82
32	41.67	41.04	40.46	39.82	39.17	38.51	37.84	37.15	36.47	35.75	35.03	34.30
40	52.43	51.63	50.86	50.04	49.21	48.37	47.51	46.63	45.74	44.83	43.90	42.95

Correcting current (A) Rated current (A) Ambient temperature (°C)	20	25	30	35	40	45	50	55	60	65	70
2	2.07	2.03	2.00	1.96	1.93	1.89	1.86	1.82	1.78	1.74	1.7
3	3.14	3.06	3.00	2.92	2.84	2.76	2.67	2.58	2.49	2.38	2.27
4	4.15	4.07	4.00	3.93	3.85	3.77	3.69	3.61	3.53	3.44	3.36
6	6.27	6.14	6.00	5.84	5.68	5.52	5.36	5.19	5.01	4.83	4.64
10	10.67	10.34	10.00	9.63	9.24	8.85	8.45	8.01	7.55	7.06	6.55
16	16.80	16.40	16.00	15.55	15.11	14.66	14.20	13.71	13.21	12.70	12.15
20	20.96	20.47	20.00	19.47	18.95	18.42	17.87	17.30	16.71	16.10	15.47
25	26.22	25.61	25.00	24.33	23.67	23.00	22.28	21.56	20.80	20.02	19.21
32	33.54	32.77	32.00	31.17	30.34	29.48	28.60	27.69	26.75	25.78	24.77
40	41.98	40.99	40.00	38.93	37.85	36.75	35.61	34.43	33.21	31.95	30.63

5.3 Altitude derating

Height above sea level (km)	Rated current	Rated voltage	Rated frequency voltage tolerance	Breaking capacity	Breaking Capacity and Electrical life
2	I_n	U_e	1	1	1
3	$0.97 I_n$	U_e	0.89	0.89	0.83
4	$0.94 I_n$	U_e	0.8	0.8	0.71
5	$0.90 I_n$	U_e	0.73	0.73	0.63

5.4 Pollution degree

Pollution degree 2

5.5 IP code (Degree of protection provided by enclosures)

IP20

6 Time-current curves

●B type curve

○protect the non-inductive or micro-sense circuit

○tripping characteristic: instantaneous tripping range is $3I_n \sim 5I_n$

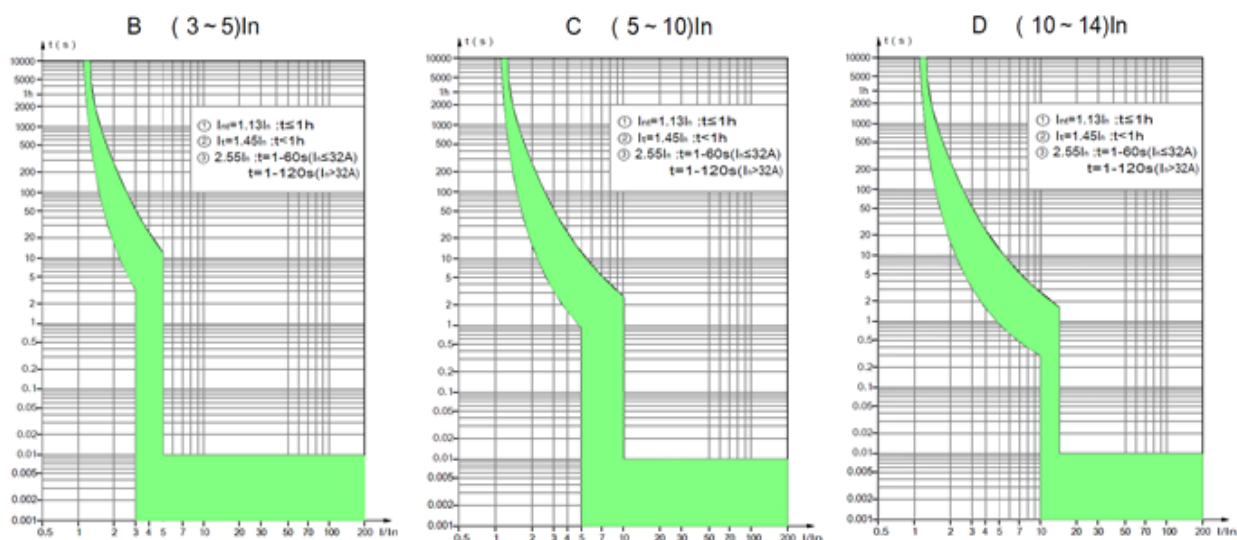
●C type curve

○protect normal load and distribution wire cable

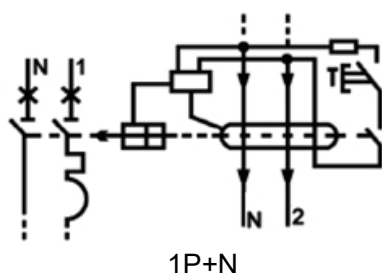
○tripping characteristic: instantaneous tripping range is $5I_n \sim 10I_n$

●D type curve

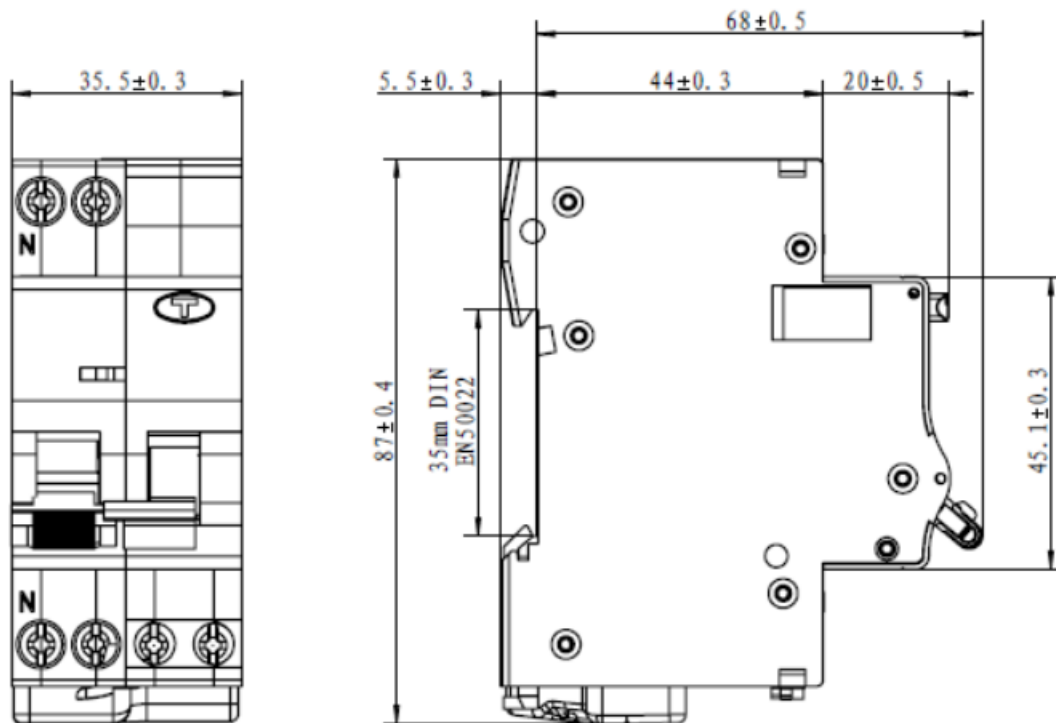
○protect industrial distribution system

○tripping characteristic: instantaneous tripping range is $10I_n \sim 14I_n$ 

7 Electrical schematic diagrams



8 Dimensions



9 Installation

Installed in TH35mm x 7.5 standard guide rail

10 Packaging and storage

6 pcs per box. Packing cartons of products should be stored in the warehouse where the air circulation and relative humidity is not more than 80% and the temperature is not higher than $+ 80^{\circ}\text{C}$ and not less than $- 40^{\circ}\text{C}$. Without acidic, alkaline and other corrosive gas. Under the above conditions, the storage period since the production date is not more than three years.

11 RoHS compliance

Meeting RoHS requirement

12 Accessories

OF2 Auxiliary Switch, SD2 Alarm Switch, MX+OF2 Shunt Release, NGQ2(A) Over/under voltage release, TM2 Remote motor Operating device, TM2GQ Automatically closing device of over/under voltage.

13 Utilization and maintenance

Refer to the required working environment and installation mode for use. Do not disassemble it for maintenance without permission.

14 Notice

- No responsibility for problems occurred by disassembly privately;
- Please make sure reliable connection to avoid fault tripping or damage of terminals caused by exceptional heat;

- Don't use hand to touch the exposed non-insulated part when the circuit breaker is powered.
- No responsibility for problems occurred by debugging the circuit breaker's characteristic optionally.
- Simulating test should be made once a month by pressing the test button to check whether the circuit breaker works normally. If RCBO is abnormal, it should be replaced.

15 Guidance of order-placing

Please specify the model, specification, poles, residual operating current and quantity when placing the order.

For example: NDB2LE-40 C40/1P+N/30mA/A 60PCS