



# NDB1L Series Residual Current Operated Circuit Breakers

2019 Edition

**Nader**

## 1. Product Overview



Model	NDB1L-32
Rated Voltage	AC230/240V
Rated Current	6A, 10A, 16A, 20A, 25A, 32A
Rated Residual Operation Current	10mA、30mA
Certificate	CCC, UL

## 2. Product Features

### ● Application Scope

NDB1L-32 RCBO is used in low-voltage terminal distribution for industry, civil building, energy, telecommunication and construction to do protection from short circuit, overload, leakage and over-voltage.

### ● Design Features

Visual window's design: Make the product's switching-closing status more clearly to see.

### ● Structure Features



### ● Standards

- ◆ GB 16917.1 Residual current operated circuit-breakers with integral over-current protection for household and similar uses(RCBOs)-Part 1 : General rules
- ◆ IEC 61009-1 Residual current operated circuit-breakers with integral overcurrent protection for household and similar uses(RCBOs)-Part 1 : General rules
- ◆ UL1053 Ground-Fault Sensing and Relaying Equipment

## 3. Working Condition

### ● Applicable Condition

- ◆ Ambient Usage Temperature and Storage Temperature

Ambient Usage Temperature:  $-25^{\circ}\text{C}\sim+55^{\circ}\text{C}$ , Standard Temperature:  $+30^{\circ}\text{C}$ , correction factor of different ambient usage temperature refer to sheet 1

Storage Temperature:  $-30^{\circ}\text{C}\sim+70^{\circ}\text{C}$ .

- ◆ Altitude

The altitude of the mounting site  $\leq 2000\text{m}$

- ◆ Relative Usage Humidity and Relative Storage Humidity

The relative humidity shouldn't exceed 50% when the ambient air temperature is  $+40$  degrees, higher humidity can be allowed in lower temperature. For example, the humidity can be 90% when the ambient temperature is  $+20$  degrees. Necessary measures should be acted for the condensation produced by the changed temperature.

### ● Pollution Degree

2

### ● Protection Level

Level of Product Protection: IP20

### ● Mounting Types

II (For Load Level) and III (For distribution and control Level)

### ● Mounting Method

Mounted on TH35mm x 7,5 Standard Rail.

### ● Mounting Direction

- ◆ Vertical Mounting: The inclination between mounting plane and vertical plane should  $\leq \pm 5$  degrees
- ◆ Horizontal Mounting

### ● Environmental Requirement

Comply with RoHS

## 4. Product Technical Characteristic

### 4.1 Model and Implication

No.	Implication	Instruction
1	Brand Code	ND <b>Nader</b>
2	Model	B: MCB
3	Design Code	1
4	Electric Leakage	L Leakage Functional Code
5	Over-Voltage Functional Code	G: Over-Voltage Protective Function. There is no Over-Voltage Protective Function if there is no "G"
6	Frame Rating	32A
7	Instantaneous Tripping Characteristic	C: Instantaneous Tripping Range 5In ~ 10In
8	Rated Current	6A, 10A, 16A, 20A, 25A, 32A
9	Number of Poles	1PN

## 4.2 Technical Parameters

	NDB1L-32
Rated Voltage (Ue)	AC230/240V(1PN)
Rated Current (Ie)	6A、10A、16A、20A、25A、32A
Tripping Characteristics of Residual Current	AC, ELE
Rated Residual Operation Current (I $\Delta$ n)	10mA、30mA
Rated Insulated Voltage (Ui)	AC500V
Rated Impulse Withstand Voltage (Uimp)	4kV
Rated Ultimted Short-Circuit Breaking Current (Icu)	4.5kA ; 6kA (UL1053)
Rated Short-Circuit Operation Breaking Current (Ics)	4.5kA ; 6kA (UL1053)
Rated Residual Connecting and Breaking Current (I $\Delta$ m)	500A
Rated Working Frequency	50/60Hz
Over-Voltage Operation Value and Time (Uover)	280V $\pm$ 12V /0.1s
Mechanical and Electric Life	10000次
Connecting and Wiring Capacity	<ul style="list-style-type: none"> <li>◆ Tunnel Connecting Terminal</li> <li>◆ Terminal Connecting Area: 1~10 mm<sup>2</sup> cable is applicable</li> <li>◆ Connecting Screw is M4, Torque is 1.2N.m</li> </ul>

● Temperature Correction Factor Sheet (1)

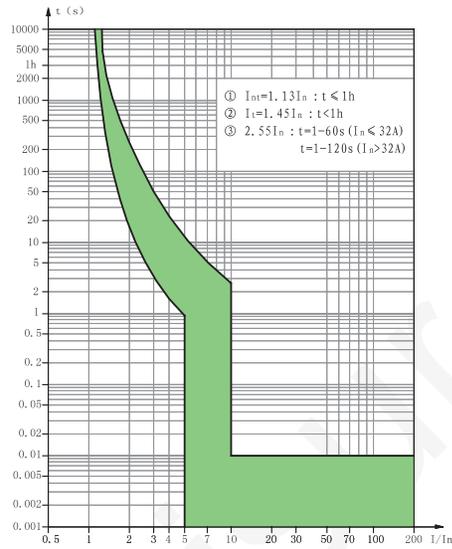
Correction Current (A) Rated Current (A) Ambient Temperature (C)	-35	-30	-25	-20	-15	-10	-5	-0	5	10	15
6	7.70	7.58	7.46	7.34	7.21	7.09	6.96	6.83	6.70	6.56	6.42
10	13.89	13.62	13.35	13.07	12.81	12.53	12.23	11.93	11.63	11.33	11.01
16	20.78	20.43	20.08	19.75	19.40	19.05	18.70	18.33	17.96	17.58	17.20
20	25.67	25.28	24.88	24.47	24.06	23.64	23.22	22.78	22.34	21.89	21.43
25	32.21	31.72	31.22	30.70	30.18	29.65	29.10	28.55	27.98	27.41	26.82
32	41.04	40.46	39.82	39.17	38.51	37.84	37.15	36.47	35.75	35.03	34.30

Correction Current (A) Rated Current (A) Ambient Temperature (C)	20	25	30	35	40	45	50	55	60	65	70
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	12.75
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

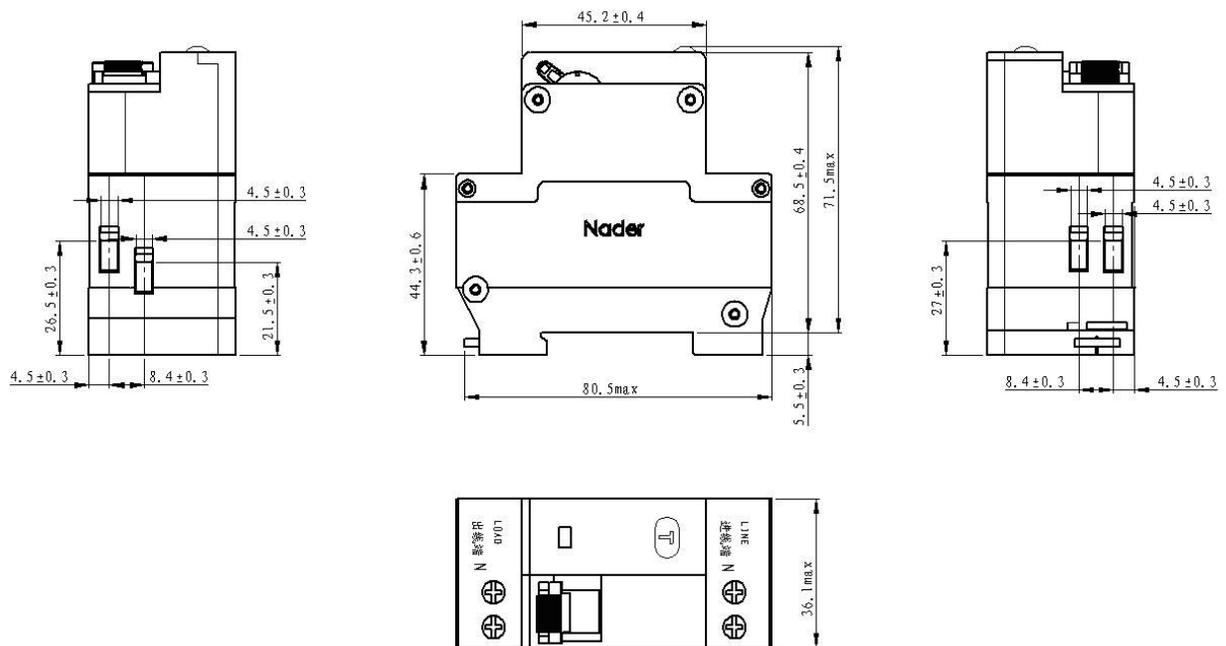
## 4.3 Tripping Curve

### C Curve

- ★ Protect nominal load and distribution cables
- ★ Rated Current: 6A-32A
- ★ Tripping Characteristics: Instantaneous tripping range  $5I_n \sim 10I_n$



## 5. Outline and Mounting Dimension



## 6. Wiring Diagram

