



# NDM1 Series MCB

2016 Edition

## Nader

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# NDM1 Series MCB

2016 Edition

**Nader**

## 1. Product Overview

			
Product Model	NDM1-63	NDM1-125	NDM1T-63
Rated Voltage	AC230/240V(1P), AC400V(2P、3P、4P) DC80V(1P、2P)	AC230/240V, AC400/415V(2P、3P、4P) DC60/80(1P) DC80/125V(2P)	AC230/240V, AC400/415V(2P、3P、4P)
Rated Current	1A、2A、3A、4A、5A、6A、 10A、16A、20A、25A、32A、 40A、50、63	50A、63A、80A、100A、125A	1A、2A、3A、4A、5A、6A、 10A、16A、20A、25A、32A、 40A、50、63
Number of Poles	1P、2P、3P、4P	1P、2P、3P、4P	1P、2P、3P、4P
Certificate	CCC	CCC、CE、TUV、UL1077	CCC、CE、TUV

## 2. Product Features

### ● Application Scope

NDM1 series miniature circuit breaker is used in low-voltage terminal distribution for industry, civil building, energy, telecommunication and construction to do protection from short circuit and overload, to control, to disconnect and protect DC systems.

### ● Design Features

- ◆ Full protection functions: Have protective device for short circuit and overload.
- ◆ Connection is safety and reliable: Use "Frame" connection structure.
- ◆ Easily function expansion: many accessory, such as: residual current operated release, auxiliary contact, alarm contact and bus-bar can match this product.
- ◆ Modularized and series match.
- ◆ Easily mounting: TH35 standard mounting rail.

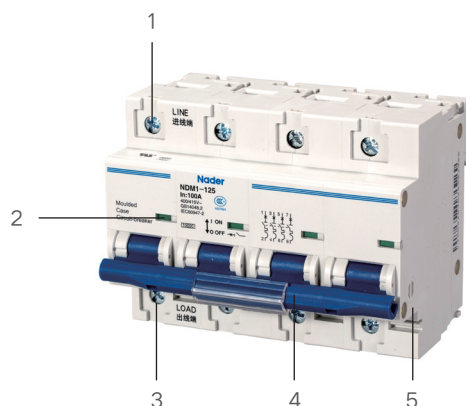
## ● Structure Features

### ◆ NDM1-63/ NDM1T-63 External Structure Diagram



- 1 : Line
- 2 : Load
- 3 : Operating Handle
- 4 : Assembly Interface

### ◆ NDM1-125 External Structure Diagram



- 1 : Line
- 2 : Switching-Closing Indicator
- 3 : Load
- 4 : Operating Handle
- 5 : Assembly Interface

## ● Standards

### ◆ NDM1-63 Standards

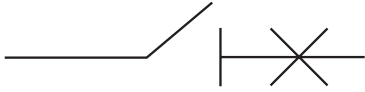
- ★ GB 10963.1-2005 Electric accessory - Over current protective circuit breaker is used in home or similar sites. First Part: Circuit Breaker for AC.
- ★ IEC 60898-1:2002 Electrical accessories-Circuit-breakers for overcurrent protection for house hold and similar installation-Part 1: Circuit-breakers for a.c.operation

### ◆ NDM1T-63 and NDM1-125 Standard

- ★ GB 14048.2 Low-voltage switchgear and control-gear equipment, Second Part:Circuit Breaker.
- ★ IEC 60947-2 Low-voltage switchgear and controlgear-Part 2 : Circuit-breakers

## 3. Working Condition

### ● Electrical Symbol



### ● Applicable Condition

- ◆ Ambient Usage Temperature and Storage Temperature

Ambient Usage Temperature:  $-35^{\circ}\text{C} \sim +70^{\circ}\text{C}$ , Standard Temperature:  $+30^{\circ}\text{C}$ , correction factor of different ambient usage temperature refer to sheet 1

Storage Temperature:  $-40^{\circ}\text{C} \sim +70^{\circ}\text{C}$ .

- ◆ 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

- ◆ 3

### ● Protection Level

- ◆ Level of Product Protection: IP20

### ● 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

<div> <div>ND</div> <div>/</div> <div>M</div> <div>1</div> <div>-</div> <div></div> <div></div> <div>/</div> <div></div> </div>					
<div> <div>1</div> <div>2</div> <div>3</div> <div>4</div> <div>5</div> <div>6</div> <div>7</div> <div>8</div> </div>					
No.	Implication	Instruction			
1	Brand Code	ND: <b>Nader</b>			
2	Product Code	M: Miniature Circuit Breaker			
3	Design Code	1			
4	Product Standards	GB 10963.1、 IEC 60898-1	GB14048.2、 IEC60947-2	GB14048.2、 IEC60947-2	
5	Frame Rating (A)	63A	125A	63A	
6	Instantaneous Tripping Characteristics	B: Instantaneous Tripping Range 3In ~ 5In; C: Instantaneous Tripping Range 5In ~ 10In; D: Instantaneous Tripping Range 10In ~ 14In;	C: Instantaneous Tripping Range 8In(1 ± 20%); D: Instantaneous Tripping Range 12In(1 ± 20%);	B: Instantaneous Tripping Range 4In ( 1 ± 20% ) C: Instantaneous Tripping Range 8In ( 1 ± 20% ) D: Instantaneous Tripping Range 12In ( 1 ± 20% )	
7	Rated Current	1A, 2A, 3A, 4A, 5A, 6A, 10A, 16A, 20A, 25A, 32A, 40A, 50A, 63A	50A, 63A, 80A, 100A, 125A	1A, 2A, 3A, 4A, 5A, 6A, 10A, 16A, 20A, 25A, 32A, 40A, 50A, 63A	
8	Number of Poles	1P, 2P, 3P, 4P	1P, 2P, 3P, 4P	1P, 2P, 3P, 4P	

## 4.2 Technical Parameters

Model	NDM1-63	NDM1-125	NDM1T-63
Rated Voltage (V)	AC230/400V (1P) DC80V (1P、2P) AC400V (2P、3P、4P)	AC230/240 DC60/80 (1P) AC400/415 DC80/125 (2P、3P、4P)	AC230/240V DC60V(1P) AC400/415V (2P、3P、4P)
Rated Current (A)	1、2、3、4、5、6、10、16、 20、25、32、40、50、63	50、63、80、100、125	1、2、3、4、5、6、10、16、 20、25、32、40、50、63
Rated Impulse Withstand Voltage(Uimp)	4KV	6KV	4KV
Rated Insulation Voltage (V)	AC500V	AC500V	AC500V
Rated Ultimate Short Circuit Breaking Current Icn	6KA (B, C, D, 1~40A) 4.5KA (B, C 50, 63A)	10kA	6kA
Rated working frequency (Hz)	50/60	50/60	50/60
Mechanical and Electrical Life	20000	10000	20000
Connecting and Wiring Capacity	<ul style="list-style-type: none"> <li>◆ Tunnel Connecting Terminal</li> <li>◆ Terminal Connecting Area : 1-25 mm<sup>2</sup> cable is applicable</li> <li>◆ Connecting Screw is M5, Torque is 2.0N.m</li> </ul>	<ul style="list-style-type: none"> <li>◆ Tunnel Connecting Terminal</li> <li>◆ Terminal Connecting Area : 10-50mm<sup>2</sup> cable is applicable</li> <li>◆ Connecting Screw is M7, Torque is 3.5N.m</li> </ul>	<ul style="list-style-type: none"> <li>◆ Tunnel Connecting Terminal</li> <li>◆ Terminal Connecting Area : 1-25 mm<sup>2</sup> cable is applicable</li> <li>◆ Connecting Screw is M5, Torque is 2.0N.m</li> </ul>

## ● Temperature Correction Factor Sheet (1)

Ambient Temperature (°C) Correction Current (A) Rated Current (A)	-35	-30	-25	-20	-15	-10	-5	-0	5	10	15
1	1.27	1.25	1.23	1.21	1.19	1.17	1.15	1.13	1.1	1.08	1.06
3	3.89	3.83	3.76	3.70	3.64	3.57	3.50	3.44	3.37	3.30	3.22
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
40	51.63	50.86	50.04	49.21	48.37	47.51	46.63	45.74	44.83	43.90	42.95
50	64.92	63.97	62.92	61.86	60.77	59.67	58.54	57.40	56.23	55.05	53.81
63	83.48	82.06	80.64	79.19	77.72	76.22	74.70	73.14	71.54	69.91	68.24
80	135	130	126	122	118	115	112	108	104	99	95
100	160	155	150	146	142	137	133	129	125	122	118

Ambient Temperature (°C) Correction Current (A) Rated Current (A)	20	25	30	35	40	45	50	55	60	65	70
1	1.05	1.02	1.00	0.97	0.94	0.91	0.89	0.86	0.83	0.80	0.77
3	3.14	3.06	3.00	2.92	2.84	2.76	2.67	2.58	2.49	2.38	2.27
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
40	41.98	40.99	40.00	38.93	37.85	36.75	35.61	34.43	33.21	31.95	30.63
50	52.56	51.28	50.00	47.82	46.24	44.81	43.33	41.81	40.23	38.58	35.77
63	66.53	64.78	63.00	60.11	58.19	56.21	54.16	52.03	49.81	47.50	43.05
80	91	88	85	82	80	75.5	72.5	68	64.50	58	52.50
100	114	111	108	103	100	94	88	82	75	68	58

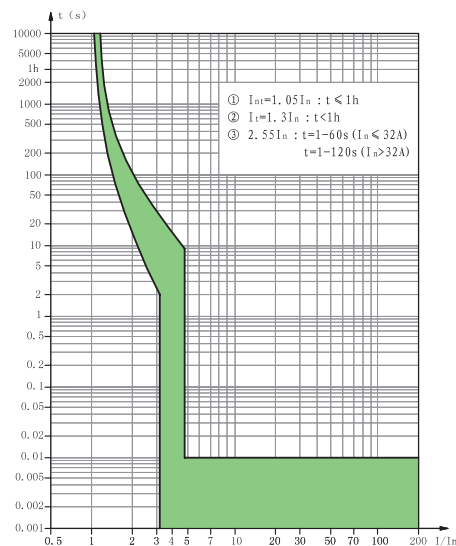


## 4.3 Tripping Curve

### 4.3.1 NDM1-63、NDM1T-63 Tripping Curve

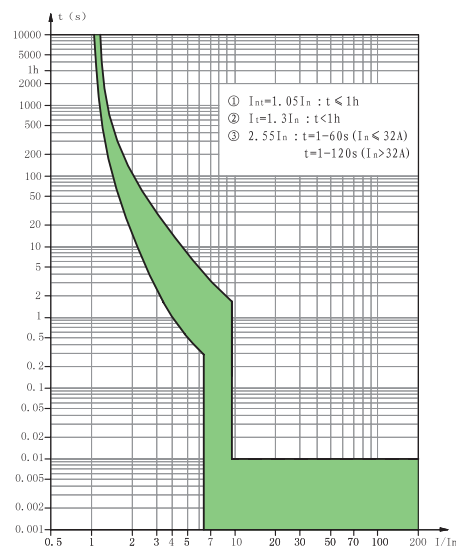
#### ● B Curve

- ★ Protect non-inductive or micro inductive circuit
- ★ Rated current: 1A~63A
- ★ Tripping characteristics: Instantaneous tripping range is  $3I_n \sim 5I_n$



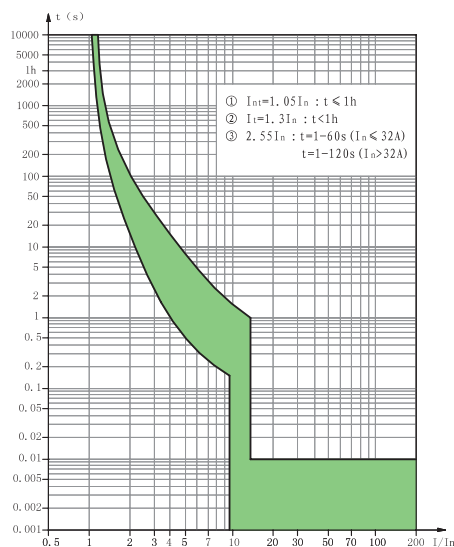
#### ● C Curve

- ★ Protect nominal load and distribution cables
- ★ Rated current: 1A~63A
- ★ Tripping characteristics: Instantaneous tripping range is  $5I_n \sim 10I_n$



## ● D Curve

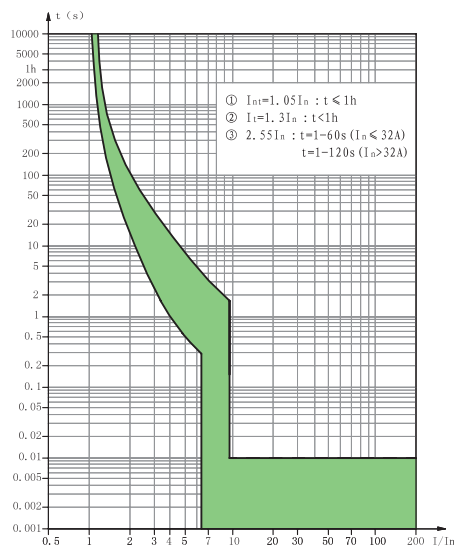
- ★ Protect industrial distribution systems
- ★ Rated Current: 1A~63A
- ★ Tripping characteristics: Instantaneous tripping range is  $10I_n \sim 14I_n$



### 4.3.2 NDM1-125 Tripping Curve

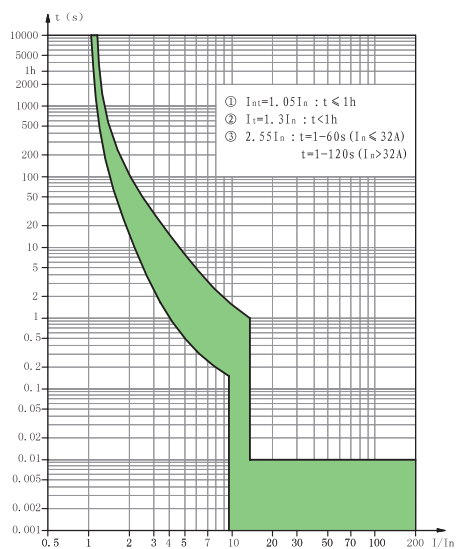
## ● C Curve

- ★ Protect nominal load and distribution cables
- ★ Rated current: 50A~100A
- ★ Tripping characteristics: Instantaneous tripping range is  $8I_n (1 \pm 20\%)$



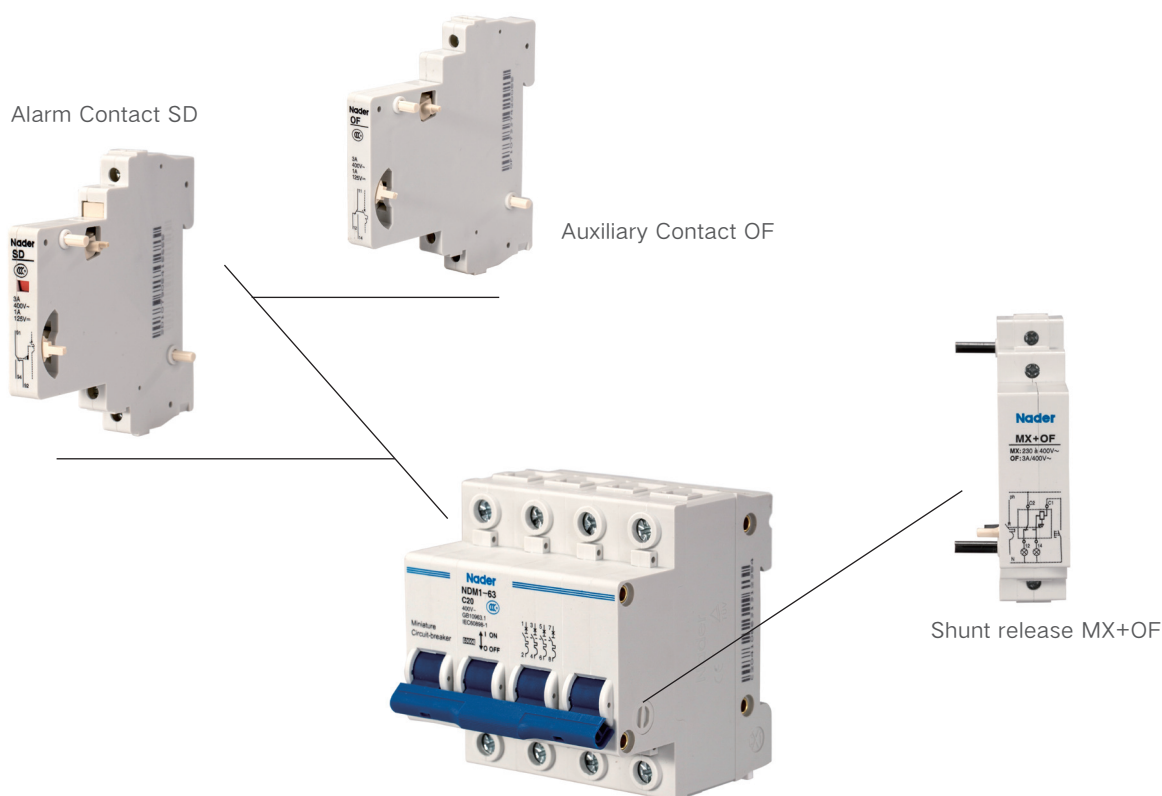
## ● D Curve

- ★ Protect industrial distribution systems
- ★ Rated current: 50A~100A
- ★ Tripping characteristics: Instantaneous tripping range is  $12I_n$  (  $1 \pm 20\%$  )



## 5. Accessory

### ● NDM1 Series accessory assembly methods



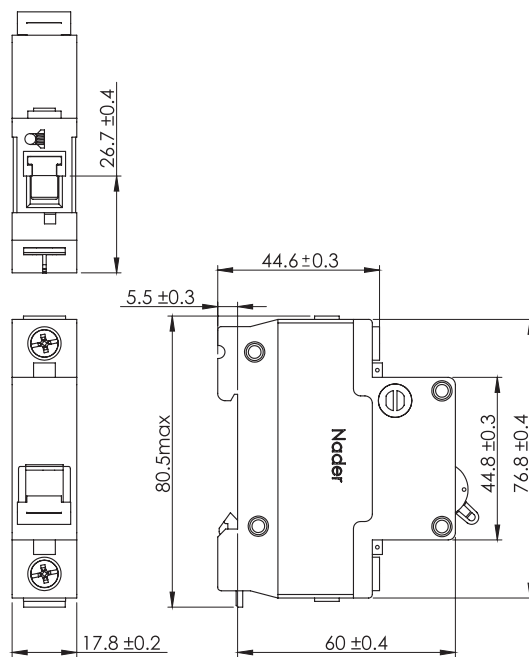
### ● NDM1-63、NDM1T-63、NDM1-125 Accessory Types

No.	Name	Accessory Code	Function and Matched Quantity
1	Auxiliary Contact	OF	Linked to the left side of MCB to indicate OPEN or CLOSE status of the associated breaker. Matched quantity :Max 3 Pcs
2	Alarm Contact	SD	Linked to the left side of MCB to indicate the accidental tripping status of the associated breaker. Matched quantity:Max 3 Pcs
3	Shunt Release	MX+OF	Linked to the right side of MCB to indicate accidental tripping status and remote breaking control of associated breaker

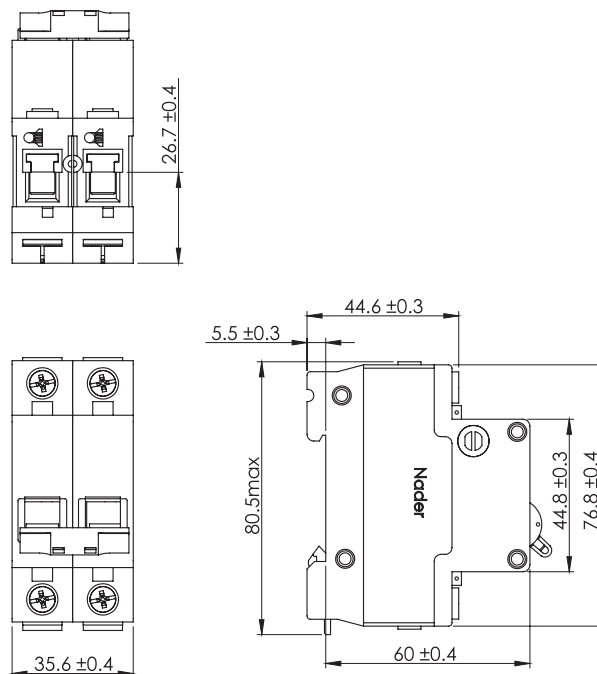
Note: Accessory parameters, please refer to "OF, SD, MX+OF" specimens.

## 6. Outline and Mounting Dimension

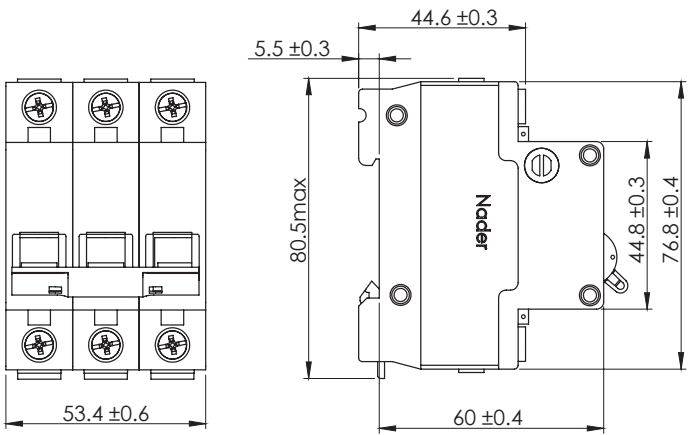
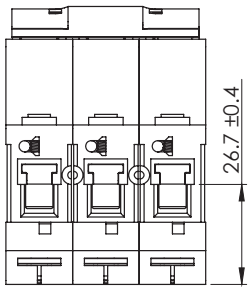
### 6.1 NDM1-63, NDM1T-63 Rail Mounting Dimension



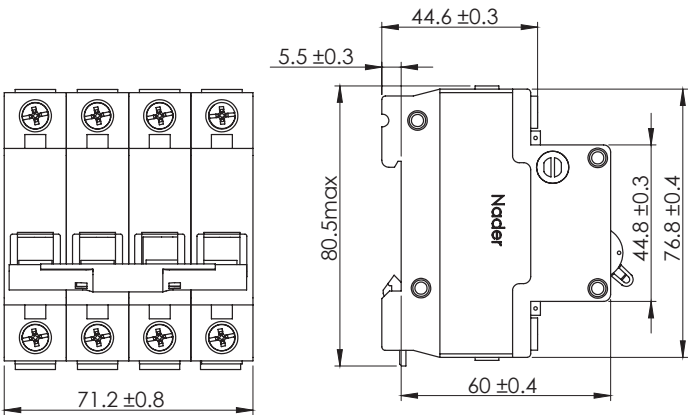
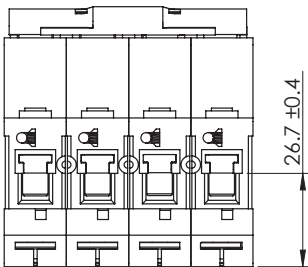
1P



2P

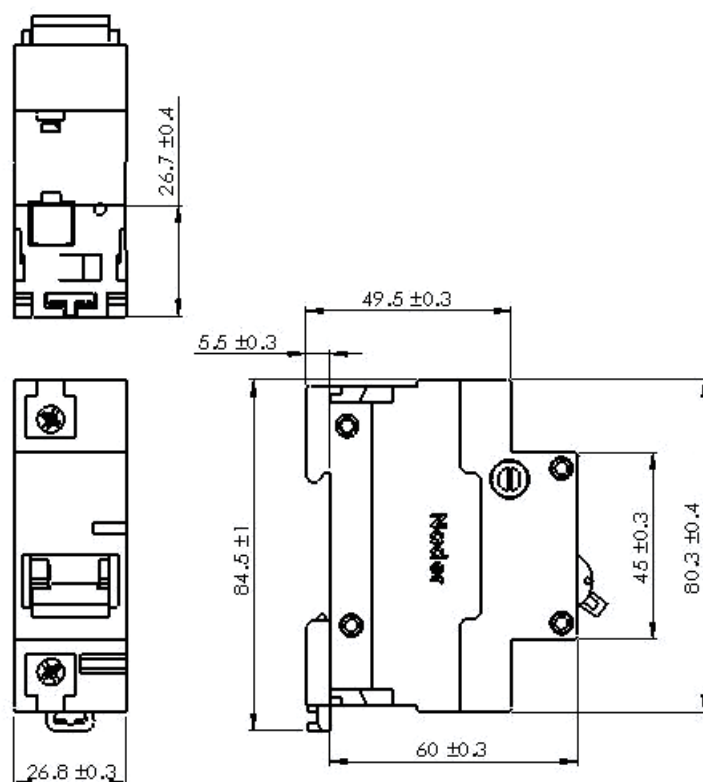


3P

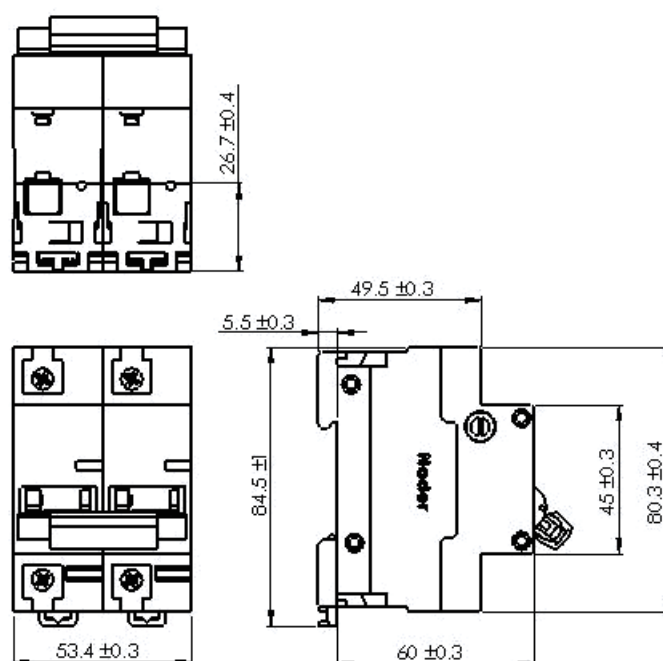


4P

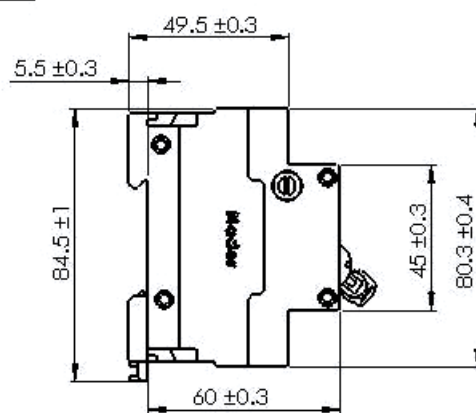
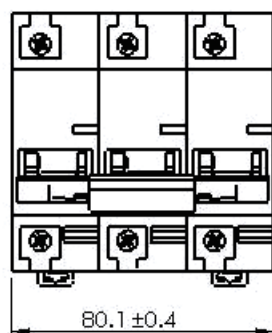
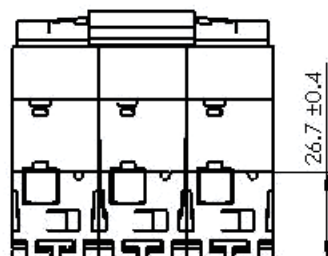
## 6.2 NDM1-125 Rail Mounting Dimension



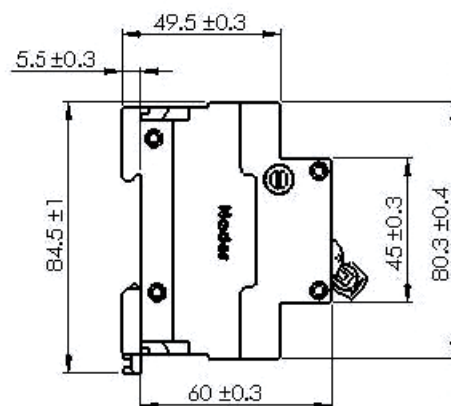
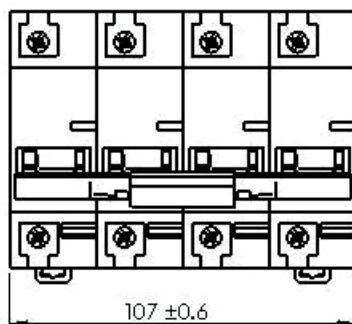
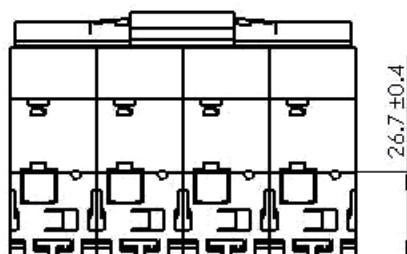
1P



2P



3P

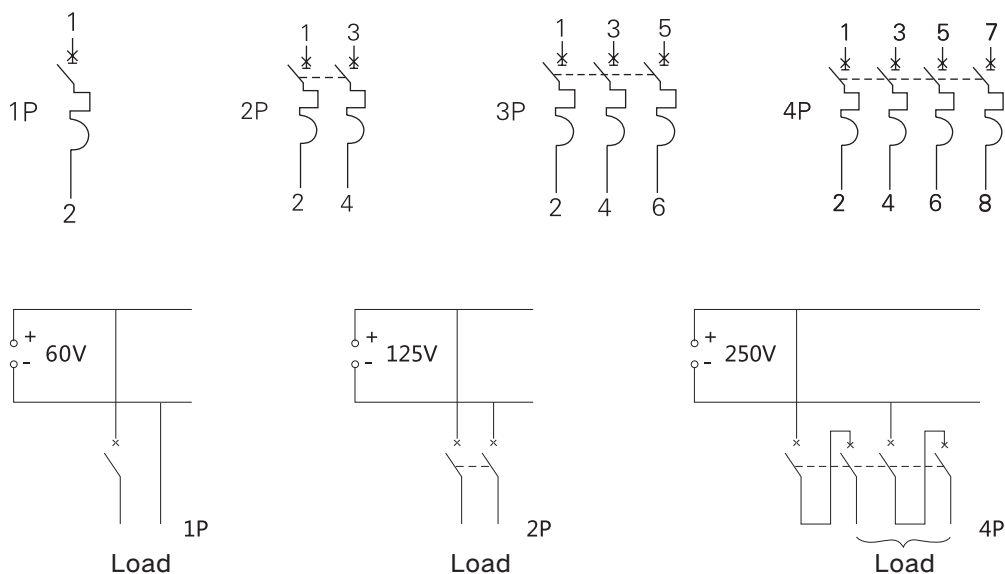


4P



## 7. Wiring Diagram

NDM1-63, NDM1T-63, NDM1-125



## 8. Ordering Types and Specifications (Tick ✓ in ☐)

Customer		Ordering Quantity:	Ordering Date:
Model	<input type="checkbox"/> NDM1-63 <input type="checkbox"/> NDM1T-63	<input type="checkbox"/> NDM1-125	
Number of Poles	<input type="checkbox"/> 1P <input type="checkbox"/> 2P <input type="checkbox"/> 3P <input type="checkbox"/> 4P	<input type="checkbox"/> 1P <input type="checkbox"/> 2P <input type="checkbox"/> 3P <input type="checkbox"/> 4P	
Rate Working Current (A)	1、2、3、4、5、6、10、16、20、25、32、40、50、63	50、63、80、100、125	
Tripping Characteristics	<input type="checkbox"/> B: Instantaneous tripping range $3I_n \sim 5I_n$ , protect non-inductive and micro inductive circuits <input type="checkbox"/> C: Instantaneous tripping range $5I_n \sim 10I_n$ , protect nominal load and distribution cables <input type="checkbox"/> D: Instantaneous tripping range $10I_n \sim 14I_n$ , protect industrial distribution systems	<input type="checkbox"/> C: Instantaneous tripping range $5I_n \sim 10I_n$ , protect nominal load and distribution cables <input type="checkbox"/> D: Instantaneous tripping range $10I_n \sim 14I_n$ , protect industrial distribution systems	





# NDM1F Series MCB

2016 Edition

**Nader**

1. Product Overview

		
Product Model	NDM1F-63	
Rated Voltage	AC230/240V	AC400/415V
Rated Current	6A , 10A , 16A , 20A , 25A , 32A , 40A , 50A , 63A	
Number of Poles	1PN	3PN
Certificate	CCC	CCC

## 2. Product Features

### ● Application Scope

NDM1F-63 Series prepayment circuit breaker (hereafter referred to as circuit breaker), applied to AC 50\60Hz, rated working voltage 415V, rated current 63A circuits. circuit breaker can control breaking in remote distance or control breaking by automatic signal and protect the circuits from overload and short circuit. Circuit breaker also can be used to non-frequently convert circuits.

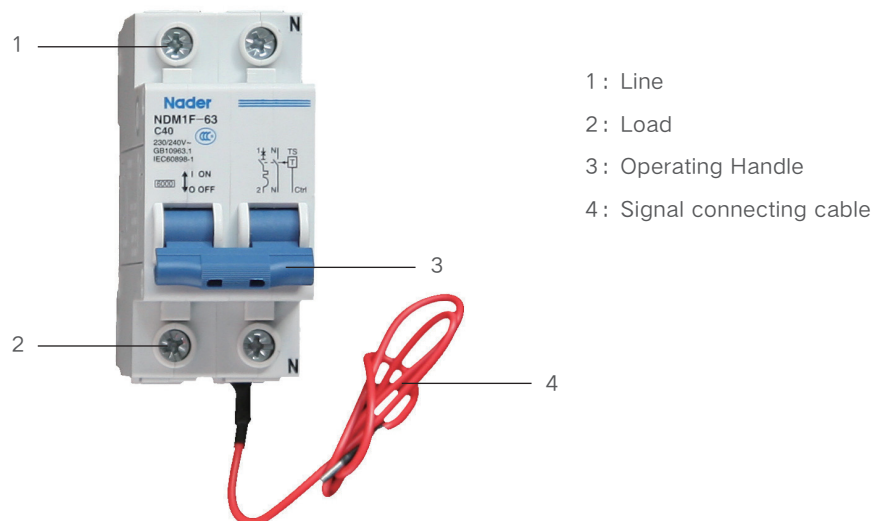
At present, circuit breaker is widely applied to control circuit's breaking together with the electric meters which do prepayment by IC card.

### ● Design Features

- ◆ Visual window's design: Make the product's switching-closing status more clearly to see.
- ◆ Modularized: Easily to remove and mount.

### ● Structure Features

- ◆ NDM1F-63 External Structure Diagram



### ● Standards

- ◆ GB10963.1 Electrical accessories-Circuit-breakers for over-current protection for household and similar installation-Part 1: Circuit-breakers for AC operation
- ◆ IEC60898-1 Electrical accessories-Circuit-breakers for overcurrent protection for household and similar installation-Part 1: Circuit-breakers for a.c. operation

## 3. Working Condition

### ● Electrical Symbol



### ● Application Condition

#### ◆ Ambient Usage Temperature and Storage Temperature

Ambient Usage Temperature:  $-35^{\circ}\text{C}\sim+70^{\circ}\text{C}$ , Standard Temperature:  $+30^{\circ}\text{C}$ , correction factor of different ambient usage temperature refer to sheet 1

Storage Temperature:  $-35^{\circ}\text{C}\sim+70^{\circ}\text{C}$ .

#### ◆ 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 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

<div> <div>ND</div> <div>/</div> <div>M</div> <div>1</div> <div>F</div> <div>-</div> <div>63</div> <div>/</div> <div><input type="checkbox"/></div> <div><input type="checkbox"/></div> <div><input type="checkbox"/></div> </div>							
<div> <div>1</div> <div>2</div> <div>3</div> <div>4</div> <div>5</div> <div>6</div> <div>7</div> <div>8</div> </div>							
No.	Implication	Instruction					
1	Brand Code	ND: <b>Nader</b>					
2	Product Code	M: Miniature Circuit Breaker					
3	Design Code	1					
4	Prepayment Function Code	F: Prepayment Function					
5	Frame Rating (A)	63A					
6	Tripping Characteristics	C					
7	Rated Current	6A, 10A, 16A, 20A, 25A, 32A, 40A, 50A, 63A					
8	Number of Poles	1PN、3PN					

## 4.2 Technical Parameters

Model	NDM1F-63
Rated Voltage (V)	AC230/240V ( 1PN ) AC400/415V ( 3PN )
Rated Current (In)	6A、10A、16A、20A、25A、32A、40A、50A、63A
Rated Residual Operating Current (mA)	30、50、100、300
Rated Insulation Voltage (V)	AC500V
Rated Impulse Withstand Voltage	4kV
Rated Ultimate Short-Circuit Breaking Current	6kA ( 6A~40A ) 4.5kA ( 50A、63A )
Rated Operating Short-Circuit Breaking Current	6kA ( 6A~40A ) 4.5kA ( 50A、63A )
Rated Working Frequency (Hz)	50/60
Reset Time	≤30s
Delayed Working Time (Intelligent Shunt Release)	1s<T<2s
Mechanical and Electrical Life	20000次
Signal Connecting Cable's Specification	Sectional Area 0.3mm <sup>2</sup> , Length 300mm
Connecting and Wiring Capacity	<ul style="list-style-type: none"> <li>◆ Tunnel Connecting Terminal</li> <li>◆ Terminal Connecting Area:1~25 mm<sup>2</sup> cable is applicable</li> <li>◆ Connecting Screw is M5, Torque is 2.0N.m</li> </ul>

## ● Temperature Correction Factor Sheet (1)

Ambient Temperature (C) Correction Current (A) Rated Current (A)	-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
40	51.63	50.86	50.04	40.21	48.37	47.51	46.63	45.74	44.83	43.90	42.95
50	64.92	63.97	62.92	61.86	60.77	59.67	58.54	57.40	56.23	55.05	53.81
63	83.48	82.06	80.64	79.19	77.72	76.22	74.70	73.14	71.54	69.91	68.24

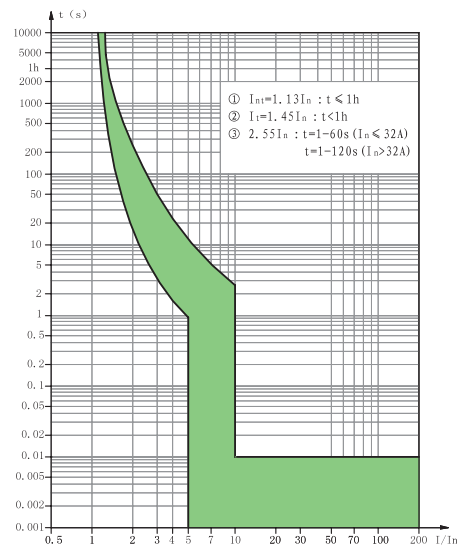
Ambient Temperature (C) Correction Current (A) Rated Current (A)	20	25	30	35	40	45	50	55	60	65	70
6	6.27	6.14	6.00	5.84	5.68	5.52	5.36	5.19	5.01	4.83	4.64
10	10.67	10.34	10.00	9.63	9.24	8.85	8.45	8.01	7.55	7.06	6.55
16	16.80	16.40	16.00	15.55	15.11	14.66	14.20	13.71	13.21	12.70	12.75
20	20.96	20.47	20.00	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
40	41.98	40.99	40.00	38.93	37.85	36.75	35.61	34.43	33.21	31.95	30.63
50	52.56	51.28	50.00	47.82	46.24	44.81	43.33	41.81	40.23	38.58	35.77
63	66.53	64.78	63.00	60.11	58.19	56.21	54.16	52.03	49.81	47.50	43.05



## 4.3 Tripping Curve

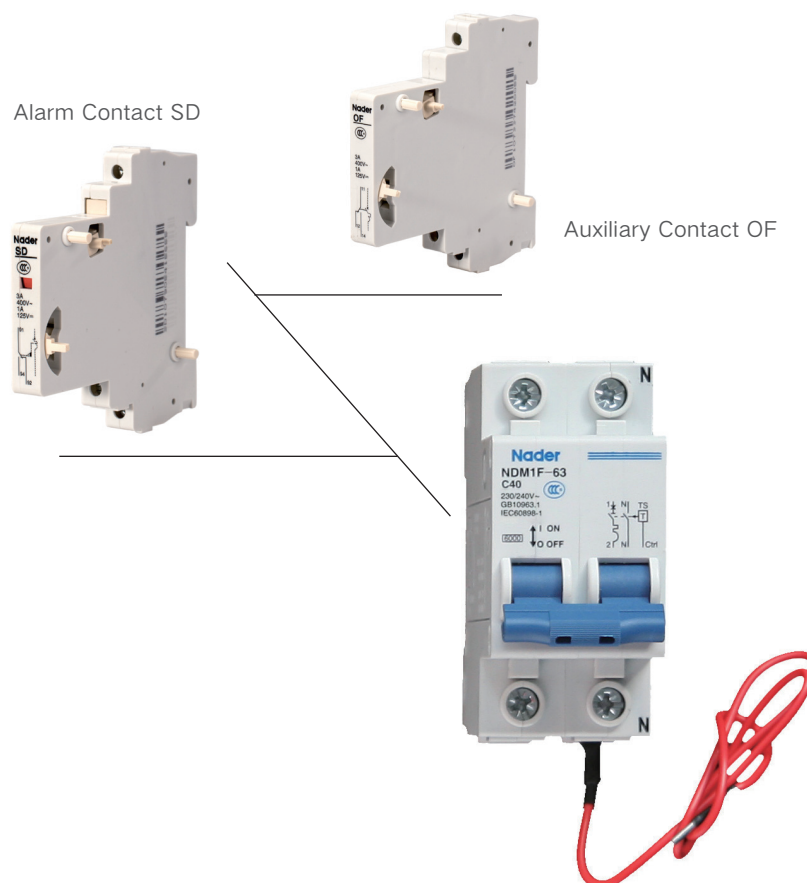
### ● C Curve

- ★ Protect Lighting Distribution Circuits
- ★ Rated Current: 6A~63A
- ★ Tripping Characteristics: Instantaneous Tripping Range  $5I_n \sim 10I_n$



## 5. Accessory

### 5.1 Accessory Sheet

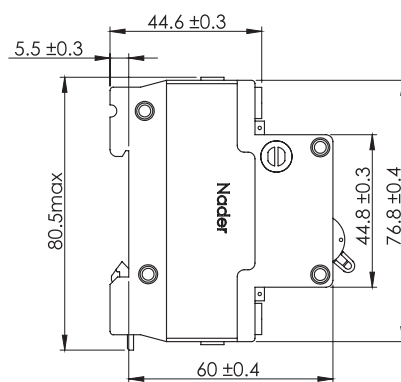
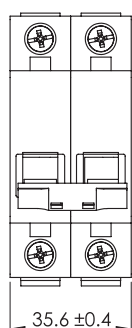
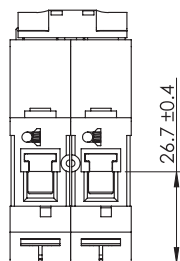


### 5.2 NDM1F-63 Accessory Types

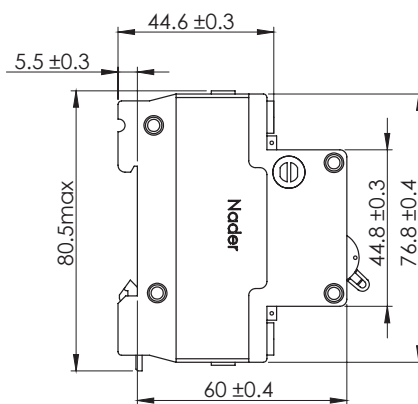
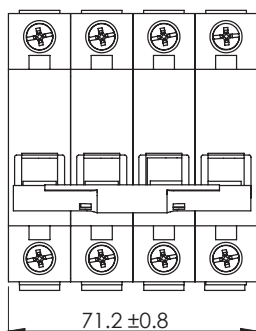
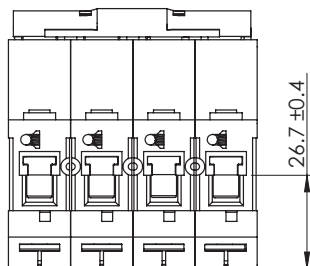
No.	Name	Accessory Code	Function and Matched Quantity
1	Auxiliary Contact	OF	Linked to the left side of MCB to indicate OPEN or CLOSE status of the associated breaker. Matched quantity: 3 Pcs Max.
2	Alarm Contact	SD	Linked to the left side of MCB to indicate the accidental tripping status of the associated breaker. Matched quantity: 3 Pcs Max.

Note: Accessory parameters, please refer to "OF、SD" specimens.

## 6. Outline and Mounting Dimension

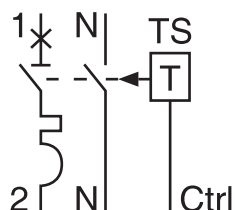


1PN

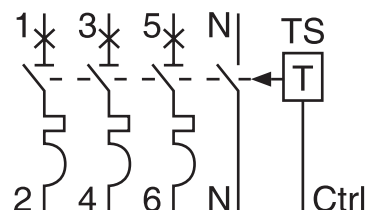


3PN

## 7. Wiring Diagram



1PN Electrical  
Connecting Diagram



3PN Electrical  
Connecting Diagram

## 8. Ordering Types and Specifications(Tick ✓ in ☐)

Customer		Ordering Quantity:	Ordering Date:
Model	<input type="checkbox"/> NDM1F-63		
Rated Working Voltage (V)	<input type="checkbox"/> AC230/240 <input type="checkbox"/> AC400/415		
Rated Working Current (A)	6、10、16、20、25、32、40、50、63		
Number of Poles	<input type="checkbox"/> 1PN <input type="checkbox"/> 3PN		



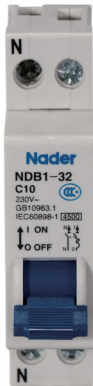



# NDB1 Series MCB

2016 Edition

**Nader**

## 1. Product Overview

		
Model	NDB1-32	NDB1-125
Rated Voltage (V)	AC230	AC400/415
Rated Current (A)	6、10、16、20、25、32	50、63、80、100、125
Number of Poles	1PN	1P、2P、3P、4P
Certificate	CCC	CCC

## 2. Product Features

### ● Application Scope

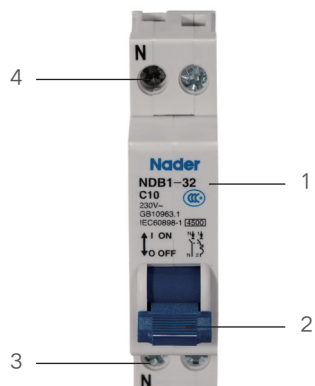
NDB1 Series MCB of TT and TN-S earth-system have such functions: Short-Circuit and Overload protection, control and disconnect. Such breaker is used in low-voltage terminal distribution for industry, civil building, energy, telecommunication and construction.

### ● Design Features

- ◆ When MCB normally open or trip because fault, the phase line and neutral line should keep disconnected status to avoid the electric hurt by electrified neutral line.
- ◆ Full Protection Functions with overload and short-circuit protection. When connect or do breaking operation, you should connect the neutral line at first, then do breaking operation.
- ◆ Connection is safety and reliable: Use "Frame" connection structure
- ◆ Easily mounting: TH35 standard mounting rail.

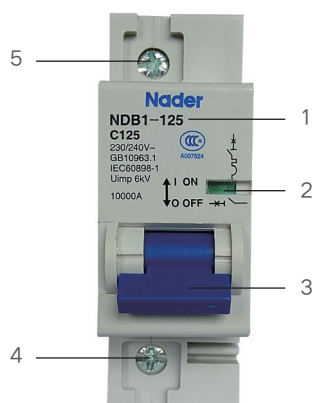
## ● Structure Features

### ◆ NDB1-32 External Structure



- 1、Model
- 2、Operation Handle
- 3、Load
- 4、Line

### ◆ NDB1-125 External Structure



- 1、Model
- 2、Switching Indicator
- 3、Operation Handle
- 4、Load
- 5、Line

## ● Standards

NDB1-32、NDB1-125 Standards as follow:

- ◆ GB 10963.1 Electrical accessories-Circuit-breakers for over-current protection for household and similar installation-Part 1: Circuit-breakers for AC operation
- ◆ IEC 60898-1 Electrical accessories-Circuit-breakers for overcurrent protection for household and similar installation-Part 1: Circuit-breakers for a.c. operation



## 3. Working Condition

### ● Electrical symbol



### ● Applicable Condition

#### ◆ Ambient Usage Temperature and Storage Temperature

Ambient Usage Temperature:  $-35^{\circ}\text{C} \sim +70^{\circ}\text{C}$ , Standard Temperature:  $+30^{\circ}\text{C}$ , correction factor of different ambient usage temperature refer to sheet 1

Storage Temperature:  $-35^{\circ}\text{C} \sim +70^{\circ}\text{C}$ .

#### ◆ 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

<div> <div>ND</div> <div>B</div> <div>1</div> <div>-</div> <div></div> <div></div> <div>/</div> <div></div> </div>						
<div> <div>1</div> <div>2</div> <div>3</div> <div>4</div> <div>5</div> <div>6</div> <div>7</div> </div>						
No.	Implication	Instruction				
1	Brand Code	ND: <b>Nader</b>				
2	Product Code	B: Miniature Circuit Breaker				
3	Design Code	1				
4	Frame Rating-Rated Current (A)	32		125		
5	Instantaneous Tripping Characteristics	C: Instantaneous Tripping Range 5In ~ 10In;		B: Instantaneous Tripping Range 3~5In C: Instantaneous Tripping Range 5~10In D: Instantaneous Tripping Range 10~14In		
6	Rated Working Current (A)	6, 10, 16, 20, 25, 32		50A, 63A, 80A, 100A, 125A		
7	Number of Poles	1PN		1P, 2P, 3P, 4P		

## 4.2 Technical Parameters

Model	NDB1-32	NDB1-125
Current Voltage (V)	AC230	AC230/240;DC60/80(1P), AC400/415;DC80/125 (2P、3P、4P)
Rated Current (A)	6、10、16、20、25、32	50、63、80、100,125
Tripping Characteristics	C	C、D
Number of Poles	1PN	1P、2P、3P、4P
Rated Insulation Voltage (V)	AC400V	AC500V
Rated Ultimate Short Circuit Breaking Current	4.5kA	
Rated Operation Short Circuit Breaking Current	4.5kA	
Rated Working Frequency (Hz)	50/60	50/60
Mechanical and Electrical Life	10000	10000
Connecting and Wiring Capacity	<ul style="list-style-type: none"> <li>◆ Tunnel Connecting Terminal</li> <li>◆ Terminal Connecting Area: 1~6 mm<sup>2</sup> cable is applicable</li> <li>◆ Connecting Screw is M4,Torque is 1.2N.m</li> </ul>	<ul style="list-style-type: none"> <li>◆ Tunnel Connecting Terminal</li> <li>◆ Terminal Connecting Area: 10~50 mm<sup>2</sup> cable is applicable</li> <li>◆ Connecting Screw is M7, Torque is 3.5N.m</li> </ul>

## ● Temperature Correction Factor Sheet (1)

Ambient Temperature (°C) Correction Current (A) Rated Current (A)	-35	-30	-25	-20	-15	-10	-5	-0	5	10	15
1	1.27	1.25	1.23	1.21	1.19	1.17	1.15	1.13	1.10	1.08	1.06
3	3.89	3.83	3.76	3.70	3.64	3.57	3.50	3.44	3.37	3.30	3.22
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
40	51.63	50.86	50.04	49.21	48.37	47.51	46.63	45.74	44.83	43.90	42.95
50	64.92	63.97	62.92	61.86	60.77	59.67	58.54	57.40	56.23	55.05	53.81
63	83.48	82.06	80.64	79.19	77.72	76.22	74.70	73.14	71.54	69.91	68.24
80	135	130	126	122	118	115	112	108	104	99	95
100	160	155	150	146	142	137	133	129	125	122	118

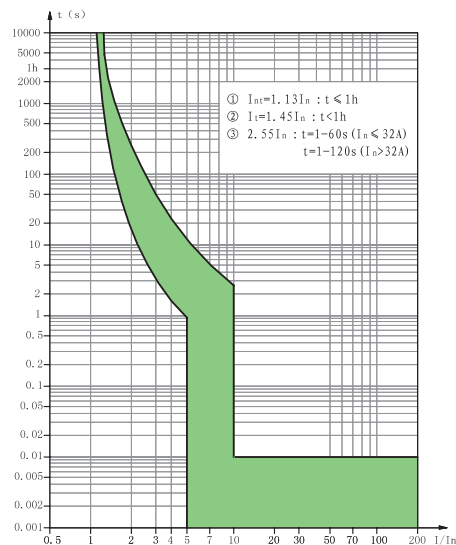
Ambient Temperature (°C) Correction Current (A) Rated Current (A)	20	25	30	35	40	45	50	55	60	65	70
1	1.05	1.02	1.00	0.97	0.94	0.91	0.89	0.86	0.83	0.80	0.77
3	3.14	3.06	3.00	2.92	2.84	2.76	2.67	2.58	2.49	2.38	2.27
6	6.27	6.14	6.00	5.84	5.68	5.52	5.36	5.19	5.01	4.83	4.64
10	10.67	10.34	10.00	9.63	9.24	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
40	41.98	40.99	40.00	38.93	37.85	36.75	35.61	34.43	33.21	31.95	30.63
50	52.56	51.28	50.00	47.82	46.24	44.81	43.33	41.81	40.23	38.58	35.77
63	66.53	64.78	63.00	60.11	58.19	56.21	54.16	52.03	49.81	47.50	43.05
80	91	88	85	82	80	75.5	72.5	68	64.5	58	52.5
100	114	111	108	103	100	94	88	82	75	68	58

## 4.3 Tripping Curve

### ● NDB1-32 Tripping Curve

#### C Curve

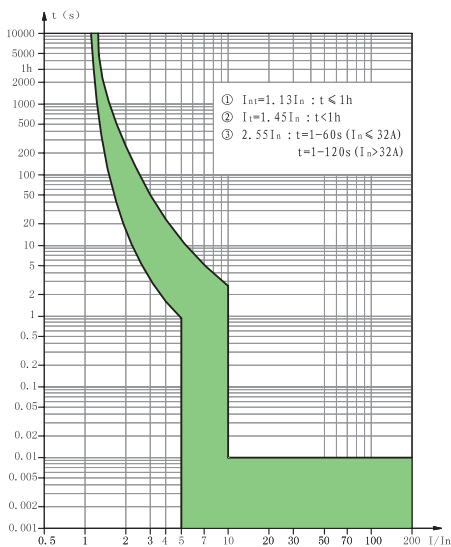
- ★ Protect nominal load and distribution cables
- ★ Rated Current: 6-32A
- ★ Tripping Characteristics: Instantaneous tripping range  $5I_n \sim 10I_n$



### ● NDB1-125 Tripping Curve

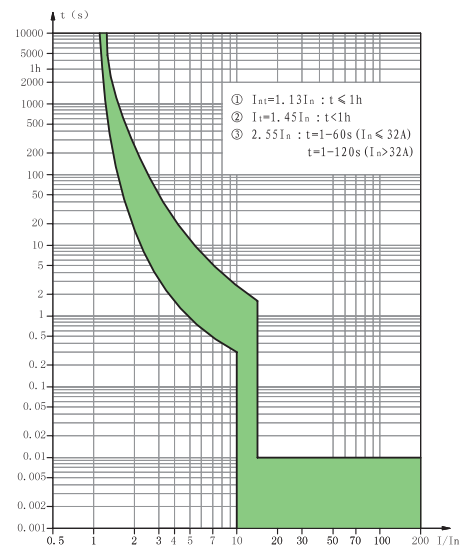
#### C Curve

- ★ Protect lighting distribution circuits
- ★ Tripping Characteristics: Instantaneous tripping range  $5I_n \sim 10I_n$



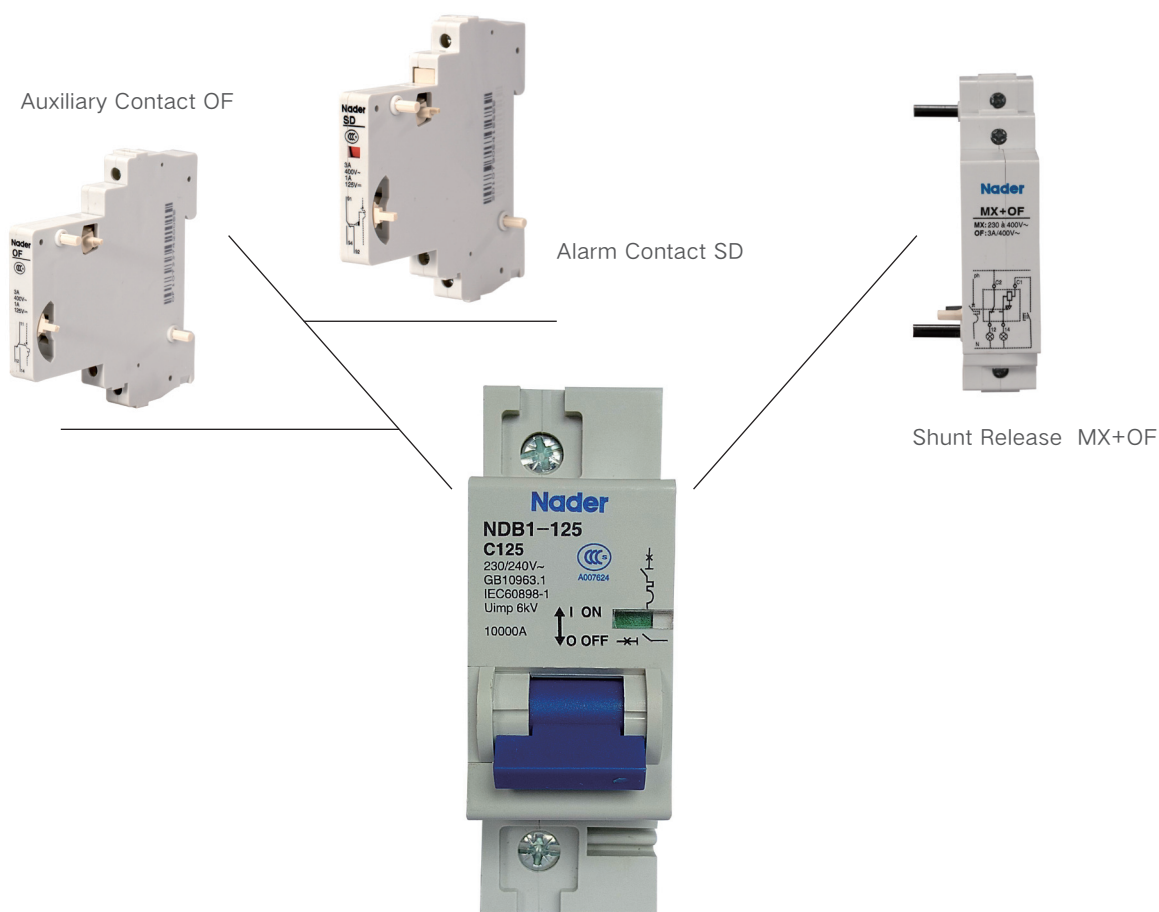
#### D Curve

- ★ Protect industrial distribution systems
- ★ Tripping Characteristics: Instantaneous tripping range  $10I_n \sim 14I_n$



## 5. Accessory

### 5.1 Accessory Sheet



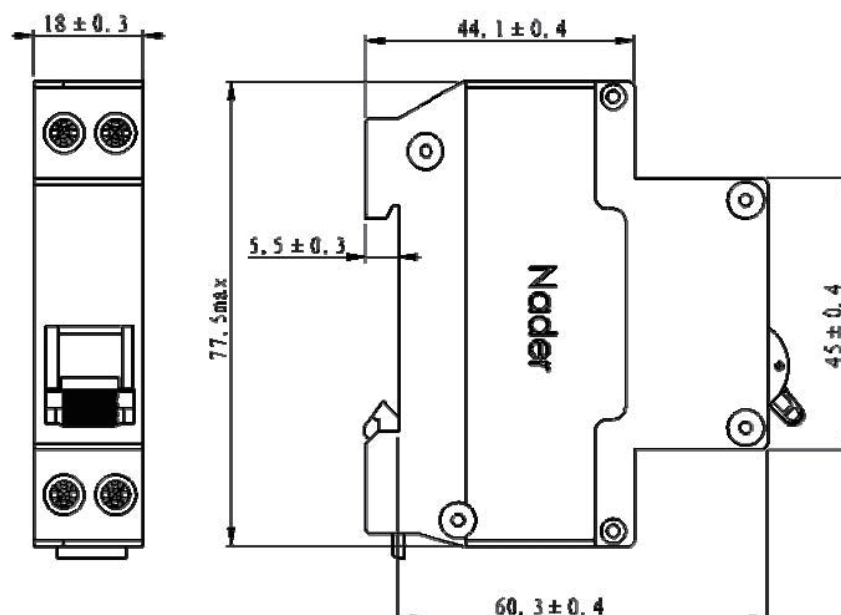
### 5.2 NDB1-125 Accessory Types

No.	Name	Accessory Code	Function and Matched Quantity
1	Auxiliary Contact	OF	Linked to the left side of MCB to indicate OPEN or CLOSE status of the associated breaker. Matched quantity: 3 Pcs Max.
2	Alarm Contact	SD	Linked to the left side of MCB to indicate the accidental tripping status of the associated breaker. Matched quantity: 3 Pcs Max.
3	Shunt Release	MX+OF	Linked to the right side of MCB to indicate accidental tripping status and remote breaking control of associated breaker.

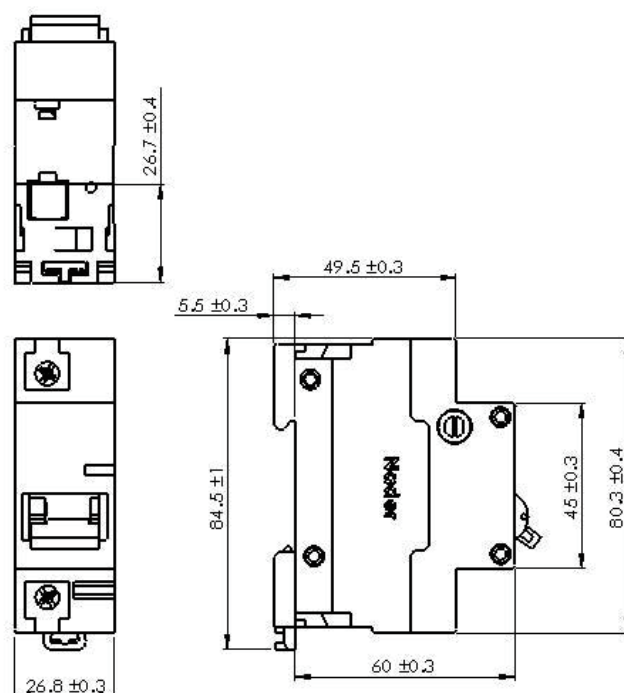
Note: Accessory parameters, please refer to "OF、SD、MX+OF" specimens.

## 6. Outline and Mounting Dimension

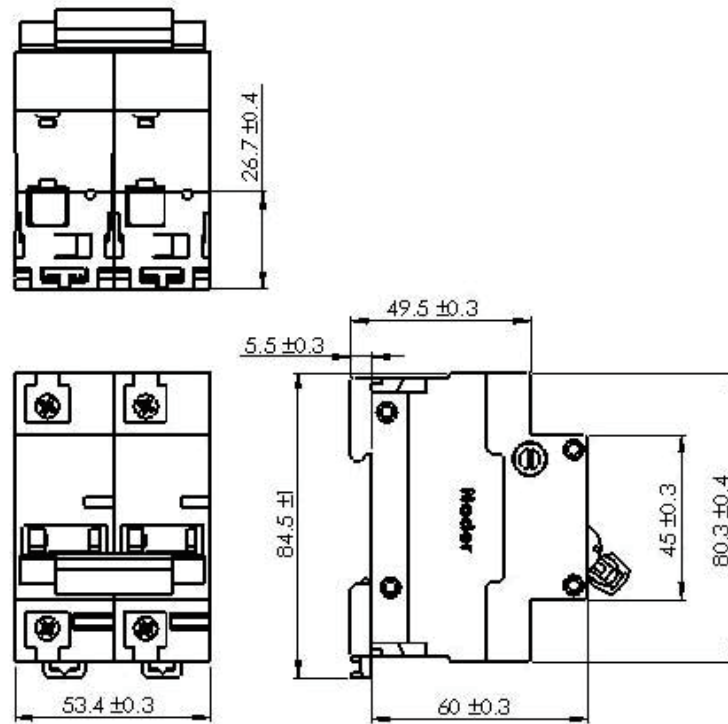
### ● NDB1-32 Mounting Dimension



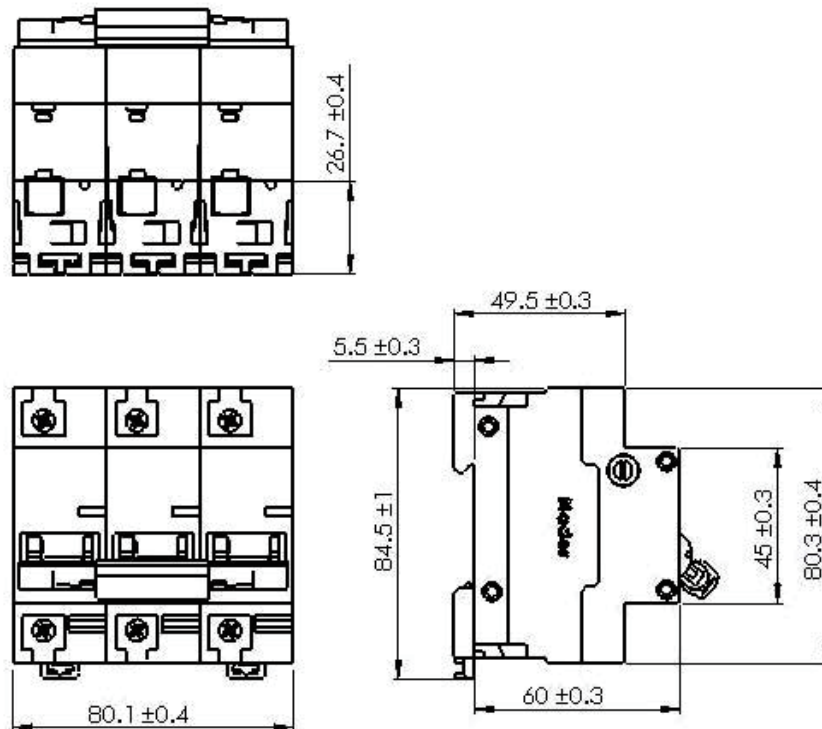
### ● NDB1-125 Mounting Dimension



1P

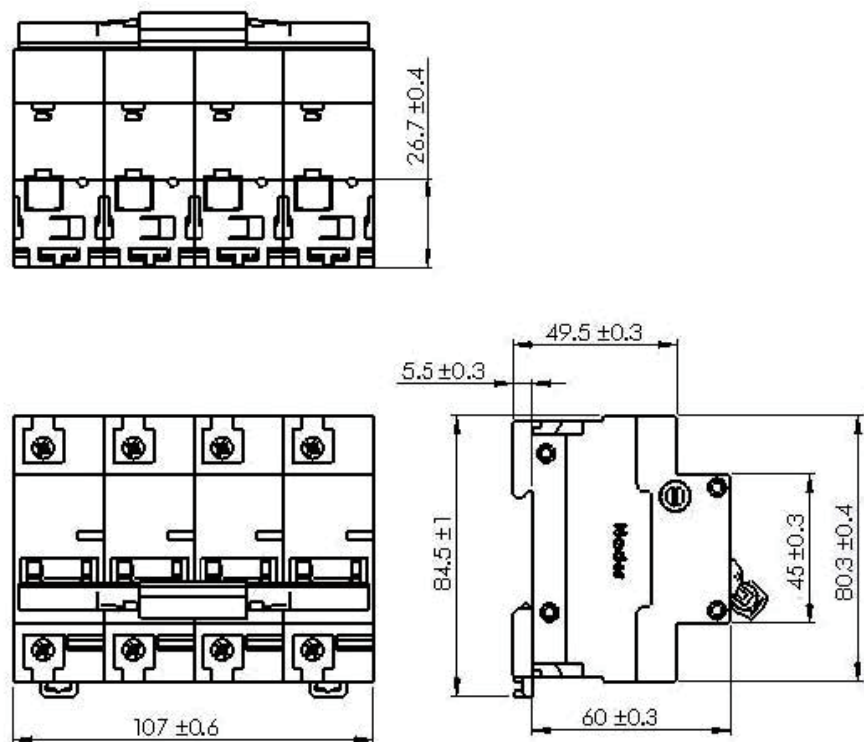


2P



3P

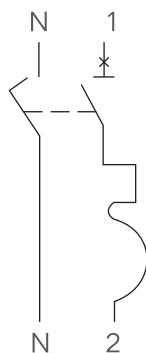




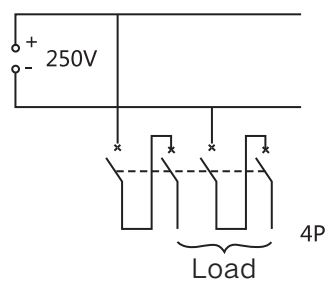
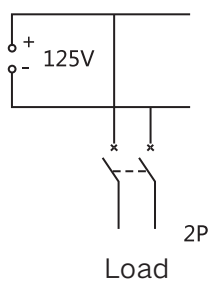
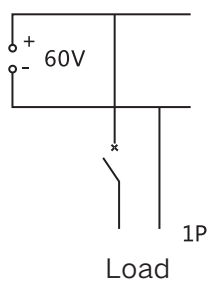
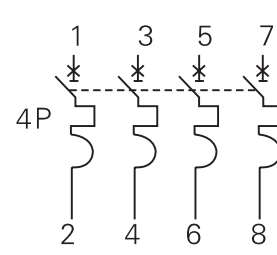
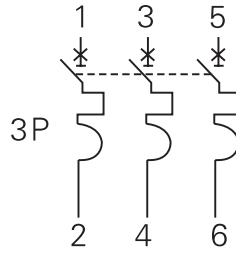
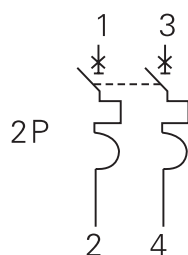
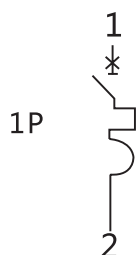
2P

## 7. Wiring Diagram

### ● NDB1-32 Connecting



### ● NDB1-125 Connecting



## 8. Ordering Types and Specifications (Tick ✓ in ☐)

Customer		Ordering Quantity:	Ordering Date:
Model	<input type="checkbox"/> NDB1-32	<input type="checkbox"/> NDB1-125	
Rated Working Current (A)	<input type="checkbox"/> 6 <input type="checkbox"/> 10 <input type="checkbox"/> 16 <input type="checkbox"/> 20 <input type="checkbox"/> 25 <input type="checkbox"/> 32	<input type="checkbox"/> 50 <input type="checkbox"/> 63 <input type="checkbox"/> 80 <input type="checkbox"/> 100 <input type="checkbox"/> 125	
Number of Poles	<input type="checkbox"/> 1PN	<input type="checkbox"/> 1P <input type="checkbox"/> 2P <input type="checkbox"/> 3P <input type="checkbox"/> 4P	
Tripping Characteristics	<input type="checkbox"/> C <input type="checkbox"/> D		




# NDB1L Series RCBO

2016 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

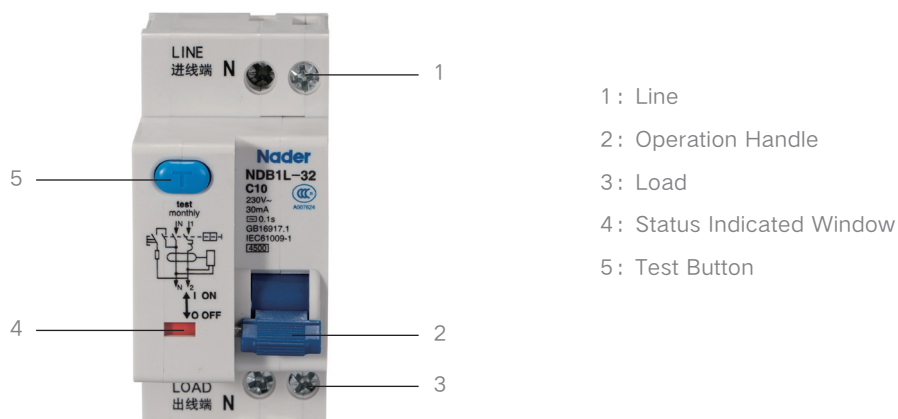
### ● Application Scope

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°C~+55°C, Standard Temperature: +30°C, correction factor of different ambient usage temperature refer to sheet 1

Storage Temperature: -30°C~+70°C.

- ◆ Altitude

The altitude of the mounting site  $\leq$  2000m

- ◆ 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

<div> <div>ND</div> <div>B</div> <div>1</div> <div>L</div> <div><input type="checkbox"/> - 32 / <input type="checkbox"/></div> <div><input type="checkbox"/></div> <div><input type="checkbox"/></div> </div>		
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)

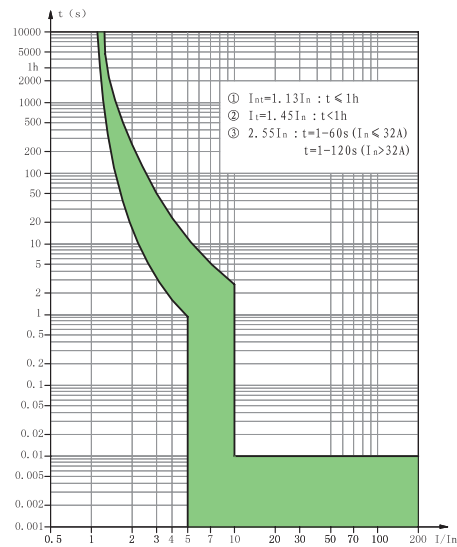
Ambient Temperature (°C) Correction Current (A) Rated Current (A)	-35	-30	-25	-20	-15	-10	-5	-0	5	10	15
6	7.70	7.58	7.46	7.34	7.21	7.09	6.96	6.83	6.70	6.56	6.42
10	13.89	13.62	13.35	13.07	12.81	12.53	12.23	11.93	11.63	11.33	11.01
16	20.78	20.43	20.08	19.75	19.40	19.05	18.70	18.33	17.96	17.58	17.20
20	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

Ambient Temperature (°C) Correction Current (A) Rated Current (A)	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

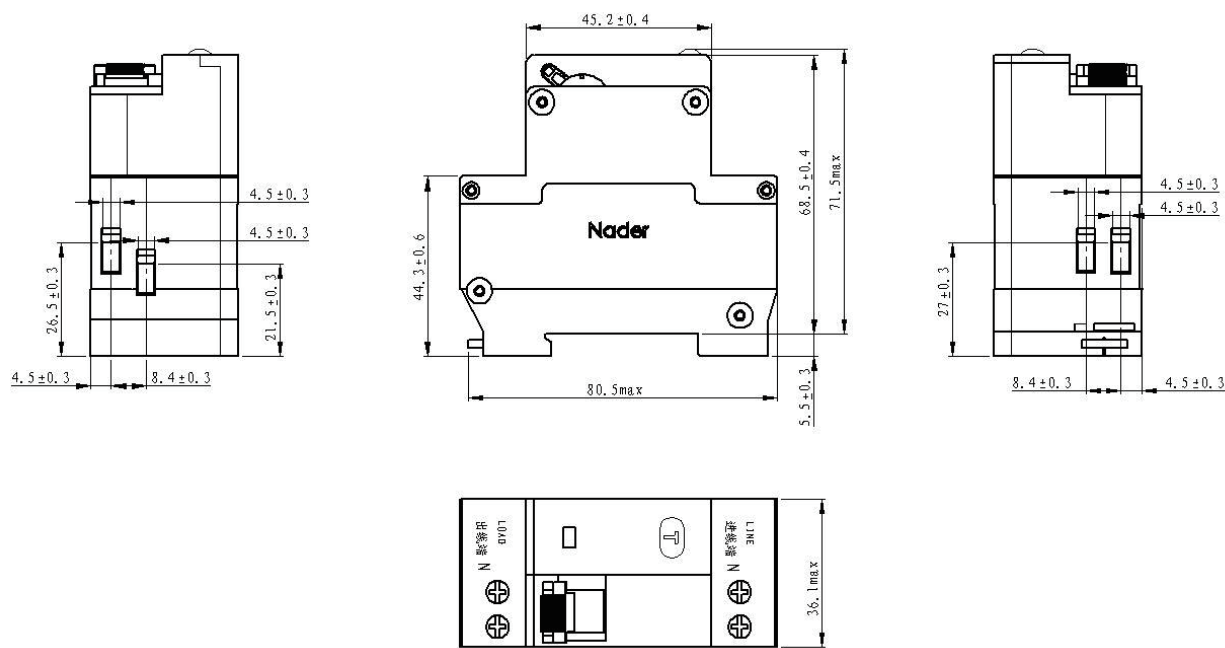
## 4.3 Tripping Curve

### C Curve

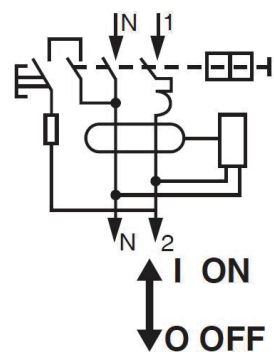
- ★ Protect nominal load and distribution cables
- ★ Rated Current: 6A-32A
- ★ Tripping Characteristics: Instantaneous tripping range  $5I_n \sim 10I_n$



5. Outline and Mounting Dimension



6. Wiring Diagram



## 7. Ordering Types and Specifications (Tick ✓ in ☐)

Customer		Ordering Quantity:	Ordering Date:
Frame Rating	<input type="checkbox"/> NDB1L-32		
Number of Poles	<input type="checkbox"/> 1PN		
Rated Working Voltage(V)	<input type="checkbox"/> AC230/240 <input type="checkbox"/> Other (Depend on Customer)		
Rated Working Current(A)	6、10、16、20、25、32		
Rated Residual Operation Current(I $\Delta$ n)(mA)	<input type="checkbox"/> 10 <input type="checkbox"/> 30 <input type="checkbox"/> Other (Depend on Customer)		
Over-Voltage Function	<input type="checkbox"/> G <input type="checkbox"/> Without Over-Voltage Protective Function		
Instantaneous Tripping Characteristic	<input type="checkbox"/> C Instantaneous Tripping Range: 5In ~ 10In ; Protect Nominal Load and Distribution Cables		
Connecting	<input type="checkbox"/> Upper Wiring <input type="checkbox"/> Lower Wiring		



# NDG1 Series Disconnecter

2016 Edition

**Nader**

1. Product Overview

				
Model	NDG1-100 ( 1P )	NDG1-100 ( 2P )	NDG1-100 ( 3P )	NDG1-100 ( 4P )
Applicable Types	AC-22A	AC-22A	AC-22A	AC-22A
Rated Working Voltage (V)	AC 230/240V	AC 400/415V	AC 400/415V	AC 400/415V
Rated Working Current (A)	32, 63, 100	32, 63, 100	32, 63, 100	32, 63, 100
Certificate	3C, CE, TUV	3C, CE, TUV	3C, CE, TUV	3C, CE, TUV

## 2. Product Features

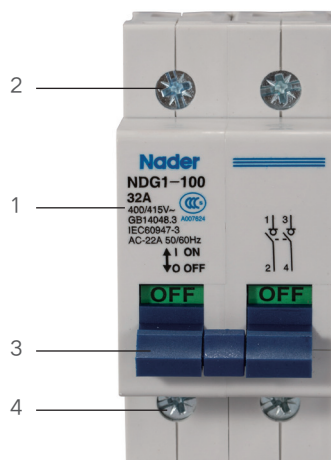
### ● Application Scope

NDG1 Series disconnector can be applicable for usage in the circuits with AC50HZ/60HZ, Rated Voltage up to 415V and Rated Current up to 100A. And they are often used in the building's circuits and industrial distribution systems to do the circuits' disconnecting function. Infrequently break-make operation is also applicable.

### ● Design Features

- ◆ Contact Structure: Reliable connecting, Improve the short-time withstand current
- ◆ Modularized Assemble Structure: Flexible Selection for Poles.
- ◆ Twin Contacts Improve Product's Short-time Current-withstand

### ● 结构特点



- 1、Product Parameters
- 2、Line
- 3、Operation Handle
- 4、Load

### ● Standard

- ◆ GB 14048.3 Low-voltage switchgear and control-gear-Part 3: Switches, disconnectors, switch, disconnectors and fuse-combination units
- ◆ IEC 60947-3 Low-voltage switchgear and control-gear-Part 3: Switches, disconnectors, switch, disconnectors and fuse-combination units



## 3. Working Condition

### ● Electrical Symbol



### ● Applicable Condition

- ◆ Ambient Usage Temperature and Storage Temperature

Ambient Usage Temperature: -35°C--+70°C, the average temperature can't exceed +35°C within 24h.

- ◆ Altitude

The altitude of the mounting site ≤ 2000m

- ◆ Relative Usage Humidity and Relative Storage Humidity

- ◆ The relative humidity shouldn't exceed 50% when the ambient air temperature is +60 degrees, higher humidity can be allowed in lower temperature. For example, the humidity can be 80% 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

### ● Applicable Types

AC-22A

### ● 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

### ● Environmental Requirement

Comply With RoHS

### ● Terminal Connecting Area

2-35mm<sup>2</sup> cable is applicable

## 4. Product Technical Characteristic






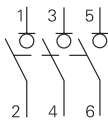

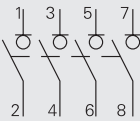
### 4.1 Model and Implication

<div> <div>ND</div> <div>G</div> <div>1</div> <div>-</div> <div><input type="text"/></div> <div>/</div> <div><input type="text"/></div> <div>/</div> <div><input type="text"/></div> </div>		
<div> <div>1</div> <div>2</div> <div>3</div> <div>4</div> <div>5</div> <div>6</div> </div>		
No.	Implication	Instruction
1	Brand Code	ND: <b>Nader</b>
2	Model	G: Disconnecter
3	Design Code	1
4	Frame Rating	100
5	Rated Current	32A, 63A, 100A
6	Number of Poles	1: 1P、 2: 2P、 3: 3P、 4: 4P

### 4.2 Technical Parameters

- ◆ Rated Working Voltage: AC230V/240V(1P) ; AC400V/415V(2P, 3P, 4P) ;
- ◆ Rated Insulated Voltage (Ui): 1000V ;
- ◆ Connecting and Breaking Capacity: 3InA ( 415V,  $\cos\Phi = 0.65$  ) ;
- ◆ Rated Short-Circuit Connecting Capacity: 20InA ( 415V,  $\cos\Phi = 0.9$  ) ;
- ◆ Rated Short-time Withstand Current: 20InA (415V, Conduction Time 1s)。

### 4.3 Specification

Number of Poles	Width (mm)	Rated Current (A)	Model
 <p>1P</p> 	18	32	NDG1-100 32/1
	18	63	NDG1-100 63/1
	18	100	NDG1-100 100/1
 <p>2P</p> 	36	32	NDG1-100 32/2
	36	63	NDG1-100 63/2
	36	100	NDG1-100 100/2
 <p>3P</p> 	54	32	NDG1-100 32/3
	54	63	NDG1-100 63/3
	54	100	NDG1-100 100/3
 <p>4P</p> 	72	32	NDG1-100 32/4
	72	63	NDG1-100 63/4
	72	100	NDG1-100 100/4

## 5. Accessory

### 5.1 Accessory Sheet



OF3 Auxiliary Contact

#### NDG1-100 Accessory Types

No.	Name	Model	Mounting Method
①	Auxiliary Contact	OF3	Multi-Lateral (1pcs at most)

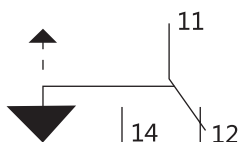


### 5.2 Accessory Functional Instruction

Parts	Function
Auxiliary Contact	Connect and monitor the product's switch-closing status synchronously and expand the auxiliary contact's quantity.

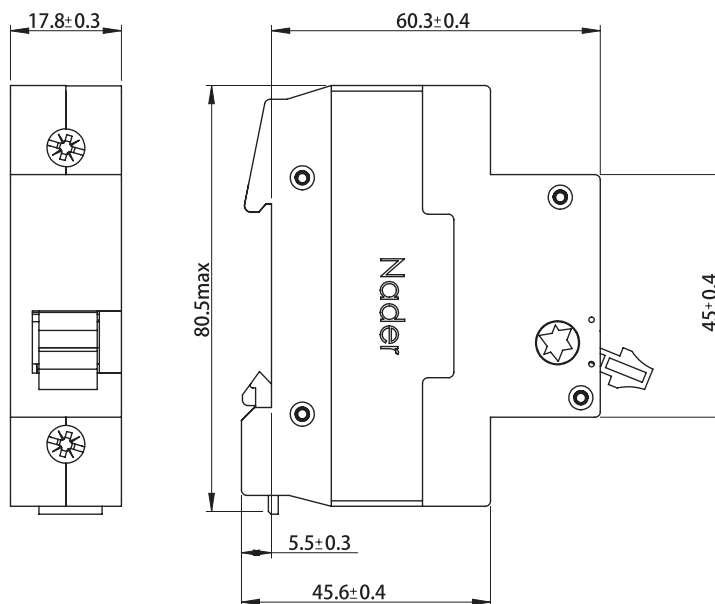
### 5.3 Accessory Technical Parameters

- ◆ AC 250V 6A ;
- ◆ AC 415V 3A ;
- ◆ Width ( mm ) : 18 ;
- ◆ When it is Closing: 11, 14 means Connecting ;
- ◆ When it is Opening: 11, 12 means Connecting ;
- ◆ Wiring Capacity:  $\leq 10\text{mm}^2$  cables ;
- ◆ OF3 Wiring Diagram :

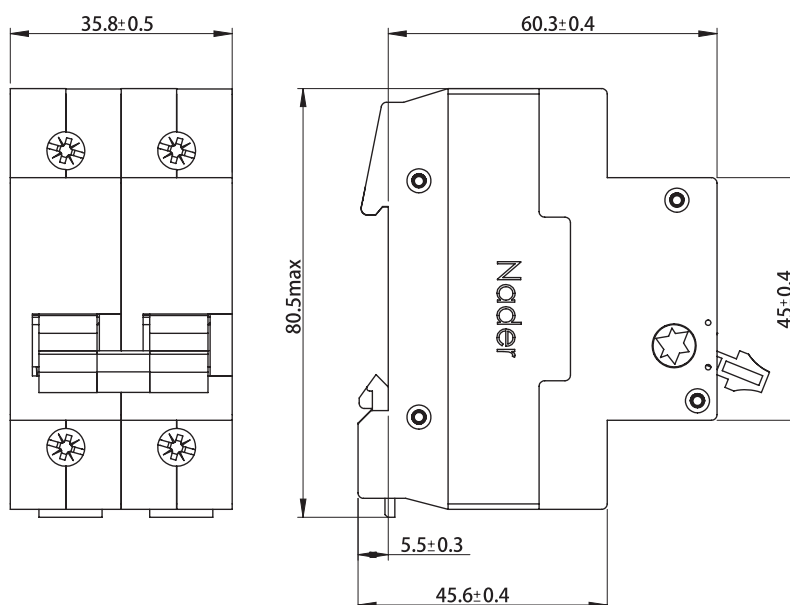


## 6. Outline and Mounting Dimension

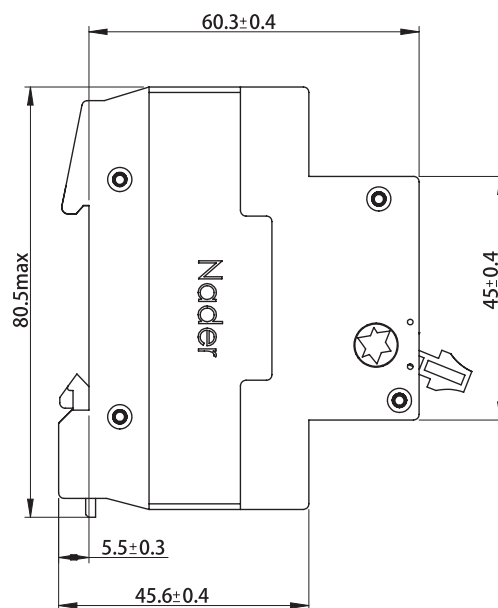
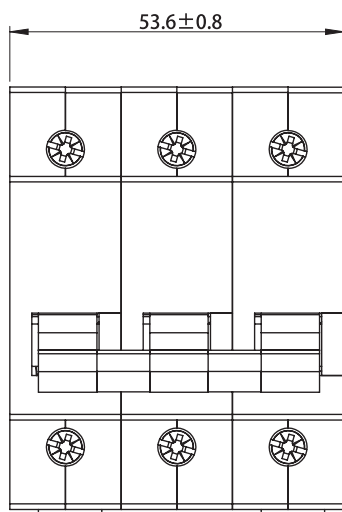
### ● NDG1-100 External Dimension



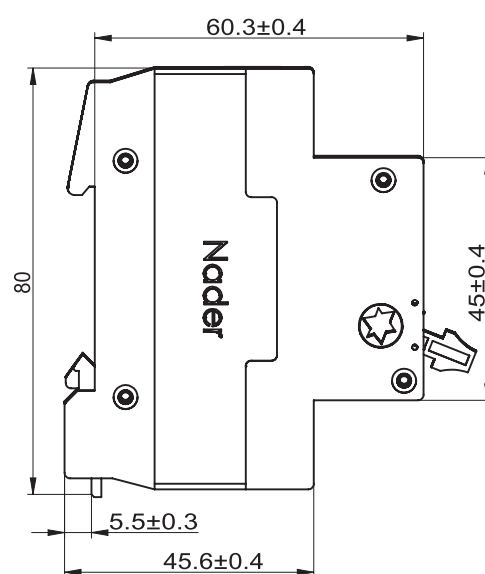
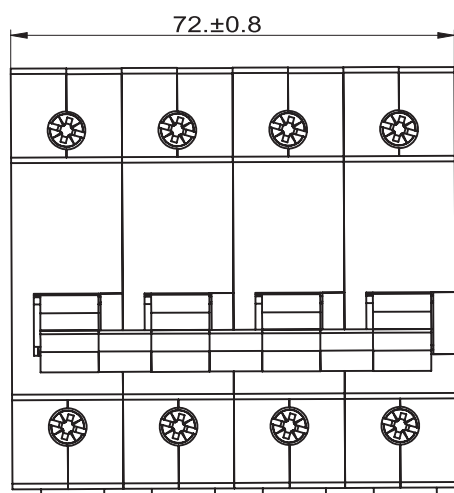
1P



2P

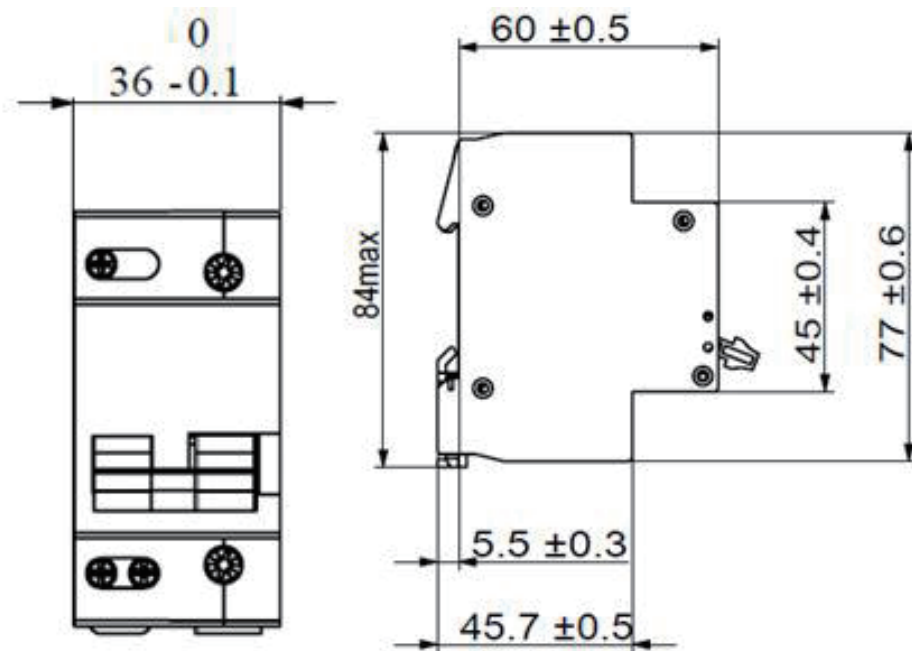


1P

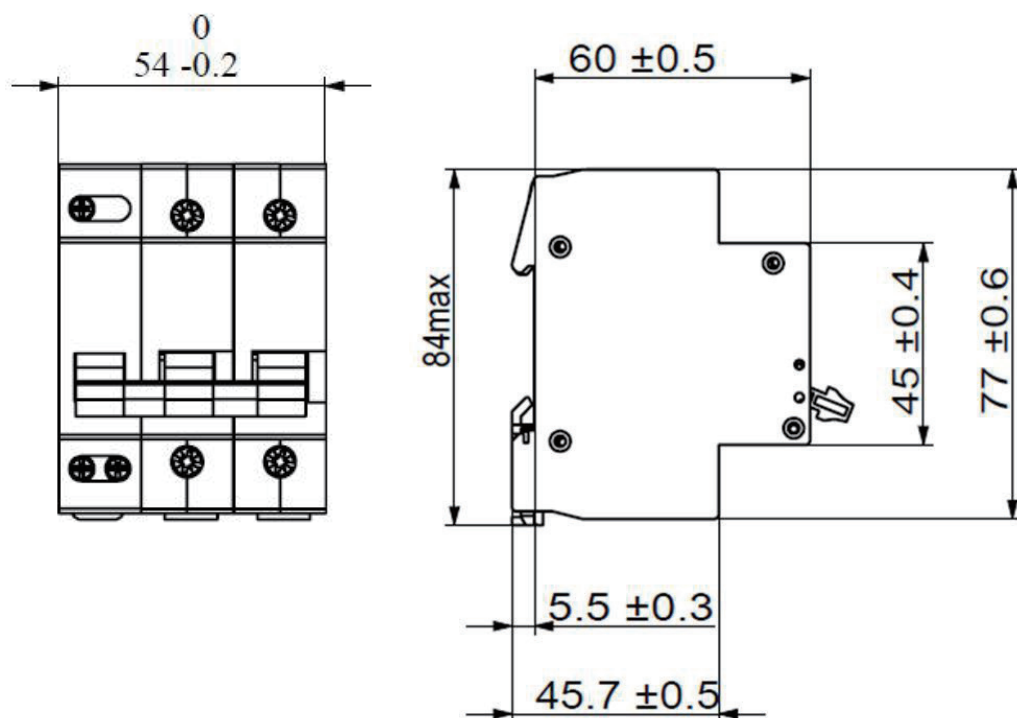


2P

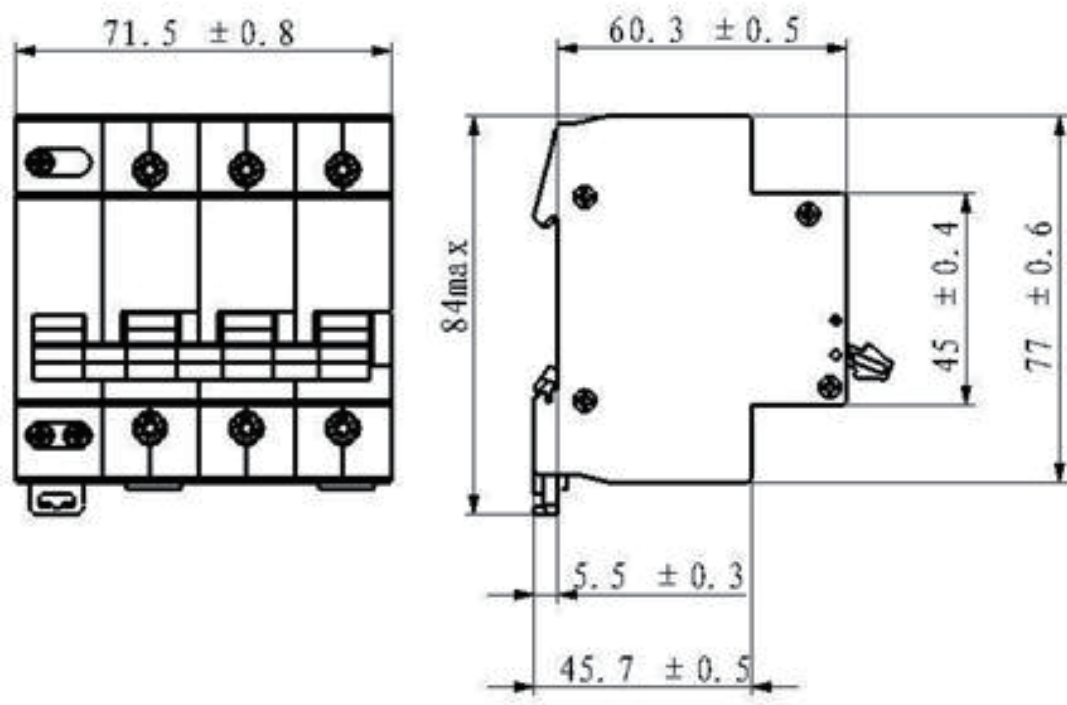
## ● NDG1-100 External Dimension of Assemble OF3



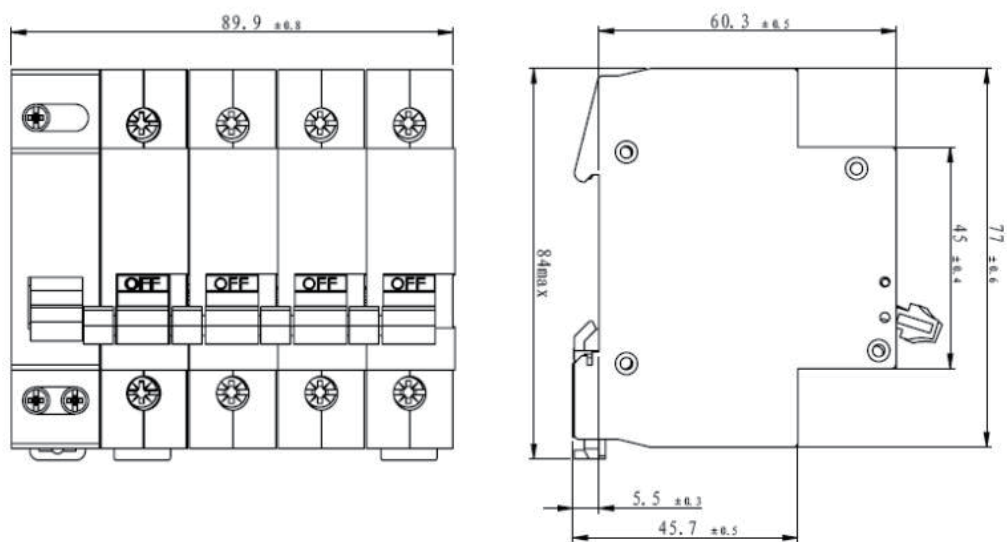
1P



2P



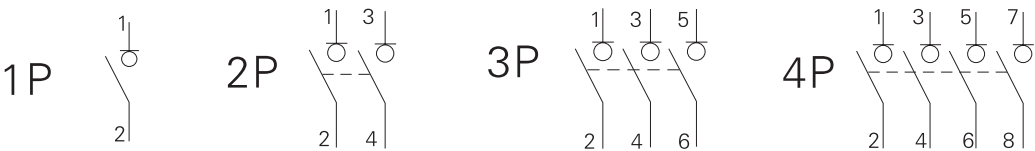
1P



2P



7. Wiring Diagram



8. Ordering Types and Specifications (Tick ✓ in ☐)

Customer		Ordering Quantity:	Ordering Date:
Frame Rating	<input type="checkbox"/> NDG1-100 100/1 <input type="checkbox"/> NDG1-100 100/4+OF3		
Number of Poles	<input type="checkbox"/> 1P <input type="checkbox"/> 2P <input type="checkbox"/> 3P <input type="checkbox"/> 4P		



# NDG1-100+NCJ1 Series Disconnecter+Conversion Operation Accessory

2016 Edition

**Nader**

1. Product Overview

		
Model	NDG1-100 100/3+NCJ1-3G1Z	NDG1-100 100/4+NCJ1-4G1Z
Applicable Types	AC-22A	AC-22A
Rated Working Voltage (V)	AC400V/415V	AC400V/415V
Rated Working Current (A)	32A/63A/100A	32A/63A/100A
Actuator	NDG1-100 100/3P	NDG1-100 100/4P

## 2. Product Features

### ● Application Scope

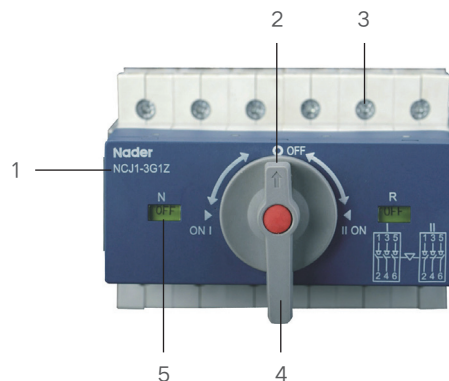
NDG1-100 can be applicable for usage in the circuits with AC50HZ/60HZ, Rated Voltage up to 415V and Rated Current up to 100A. And them are often used in the building's circuits and industrial distribution systems to do the circuits' disconnecting function. Infrequently break-make operation is also applicable. 2 sets of NDG1-100 with 3 poles + a set of NCJ1-3G1Z or 2 sets of NDG1-100 with 4 poles+a set of NCJ1-4G1Z can make up a manual change-over switch. This change-over switch can do the load transformation between 2 power in the low-voltage circuits and also can promise the safety disconnecting in the circuits.

### ● Design Features

- ◆ Contact Structure: Reliable connecting,Improve the short-time withstand current
- ◆ Twin Contacts Improve Product's Short-time Current-withstand

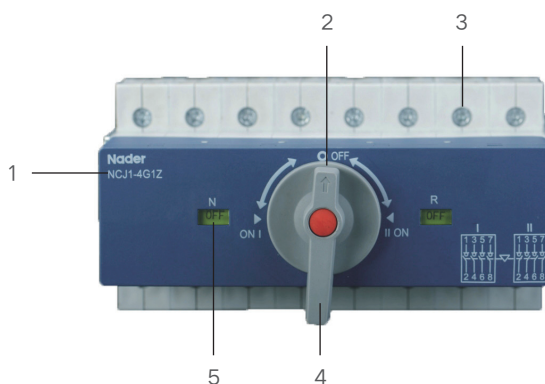
### ● Structure Features

- ◆ NDG1-100 100/3+NCJ1



- 1、Model
- 2、Opening Indicator
- 3、Connecting Terminal
- 4、Operation Handle
- 5、Closing Indicator

- ◆ NDG1-100 100/4+NCJ1



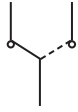
- 1、Model
- 2、Opening Indicator
- 3、Connecting Terminal
- 4、Operation Handle
- 5、Closing Indicator

### ● Standard

- ◆ GB 14048.3 Low-voltage switchgear and control-gear-, Part 3: Switches, disconnectors, switch, disconnectors and fuse-combination units
- ◆ IEC 60947-3 Low-voltage switchgear and controlgear-Part 3: Switches, disconnectors, switch, disconnectors and fuse-combination units

## 3. Working Condition

### ● Electrical Symbol



Two-Position PC Level TSE

### ● Applicable Condition

#### ◆ Ambient Usage Temperature

Ambient Usage Temperature:  $-35^{\circ}\text{C}$ ~ $+70^{\circ}\text{C}$ , the average temperature can't exceed  $+35^{\circ}\text{C}$  within 24h.

#### ◆ 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  $+60$  degrees, higher humidity can be allowed in lower temperature. For example, the humidity can be 80% 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

### ● Applicable Types

AC-22A

### ● Mounting Method

Mounted on TH35mm x 7.5 Standard Rail.

### ● Mounting Types

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

### ● Mounting Direction

Vertical Mounting

### ● Environmental Requirement

Comply with RoHS

### ● Connection

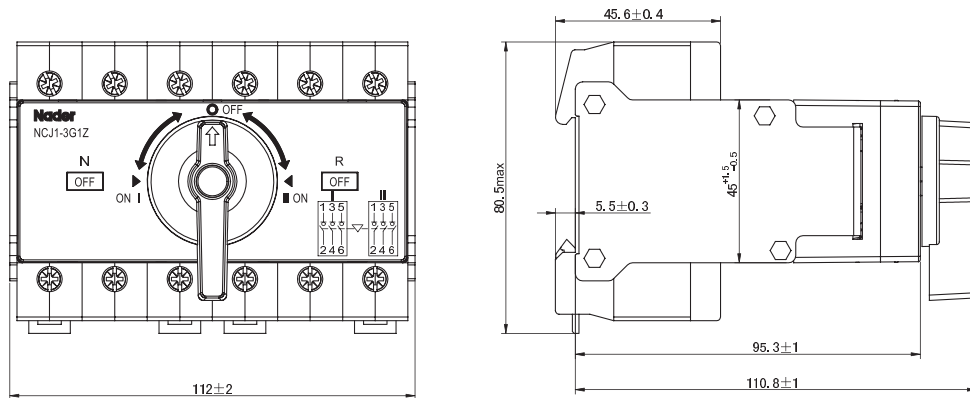
- ◆ Connecting Screw is M7, Torque is 3.5N.m
- ◆ Terminal Connecting Area: 2~35 mm<sup>2</sup> cable is applicable
- ◆ Torque of Conversion Operation is 1N.m

## 4. Product Technical Characteristic

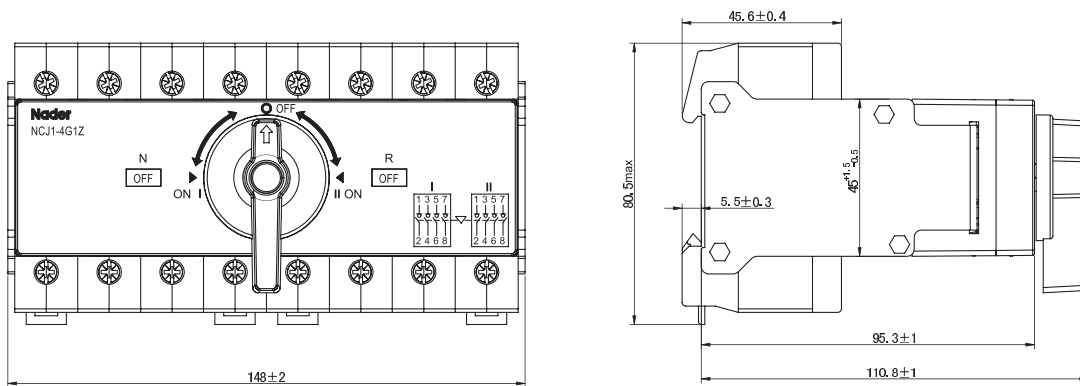
### 4.1 Model and Implication

<div> <div>ND</div> <div>G</div> <div>1</div> <div>- □ / □ / □</div> <div>+</div> <div>NCJ1</div> </div>		
No.	Implication	NDG1
1	Brand Code	ND: <b>Nader</b>
2	Model	G : Disconnector
3	Design Code	1
4	Frame Rating	100
5	Rated Current	32A, 63A, 100A
6	Number of Poles	3: 3P、4: 4P
7	NCJ1	Conversion Operation Accessory

## 5. Outline and Mounting Dimension

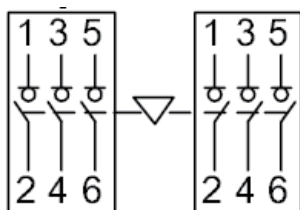


NDG1-100 100/3+NCJ1

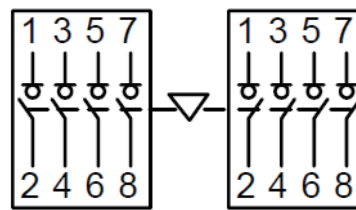


NDG1-100 100/4+NCJ1

## 6. Wiring Diagram



NDG1-100 3P+NCJ1



NDG1-100 4P+NCJ1

## 7. Ordering Types and Specifications (Tick ✓ in ☐)

Customer		Ordering Quantity:	Ordering Date:
Frame Rating	<input type="checkbox"/> NDG1-100 100/3+NCJ1	<input type="checkbox"/> NDG1-100 100/4+NCJ1	
Number of Poles	<input type="checkbox"/> 3P <input type="checkbox"/> 4P		








# NDGQ1Z Series OUPA

2016 Edition

**Nader**

1. Product Overview

	
Model	NDGQ1Z
Rated Voltage	AC220/230V
Rated Current	32A、40A、50A、63A、80A

2. Product Features

● Applicable Scope

NDGQ1Z series OUPA can be applicable for usage in the circuits with AC50HZ/60HZ and Rated Voltage 220V or 230V.This series OUPA can be installed in series with Circuit Breaker to protect the circuits when over-voltage or under-voltage happens;when the circuits get back to normal,the OUPA will switch on to protect the circuit's normal operation.

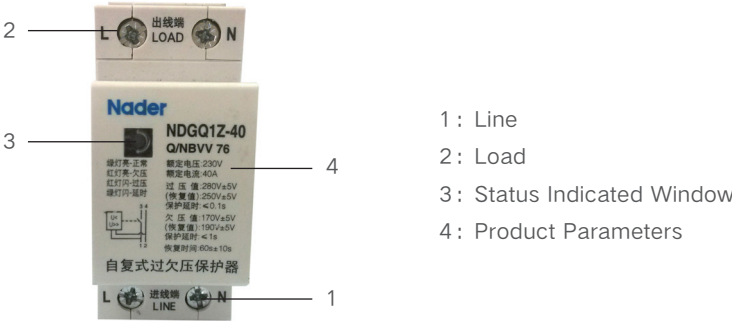
OUPA is widely used to do the protection for building and industry distribution systems.

● Design Features

- ◆ Visual window's design: Make the product's working status more clearly to see.
- ◆ Standard mounting structure: Easily to remove and mount.

● Structure Features

- ◆ NDGQ1Z External Diagram



### 3. Working Condition

#### ● Applicable Condition

##### ◆ Ambient Usage Temperature:

★ Ambient Usage Temperature:  $-25^{\circ}\text{C}$ ~ $+55^{\circ}\text{C}$ , the average temperature can't exceed  $+35^{\circ}\text{C}$  within 24h. A negotiation should be started between customers and manufacturer when the ambient temperature is lower than  $-25^{\circ}\text{C}$ .

★ Storage Temperature:  $-30^{\circ}\text{C}$  ~  $+70^{\circ}\text{C}$

##### ◆ 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 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

<div><div>ND</div><div>G</div><div>Q</div><div>1</div><div>Z</div><div>-</div><div></div></div>					
<div><div>1</div><div>2</div><div>3</div><div>4</div><div>5</div><div>6</div></div>					
No.	Implication	NDGQ1Z			
1	Brand Code	ND : <b>Nader</b>			
2	Over-Voltage Functional Code	G : Protection Function for Over-voltage			
3	Under-Voltage Functional Code	Q : Protection Function for under-voltage			
4	Design Code	1			
5	Auto-Reclosing Function Code	Z : Auto-Reclosing Function			
6	Rated Current	32A , 40A , 50A , 63A , 80A			
7	NCJ1	Converted Operation Accessory			

## 4.2 Technical Parameters

### 4.2.1 Technical Parameters Sheet

Model	NDGQ1Z
Rated Voltage (Ue)	AC220/230V
Rated Current (Ie)	32A、40A、50A、63A、80A
Rated Insulated Voltage (Ui)	AC440V
Rated Working Frequency (Hz)	50/60
Number of Poles	1PN
Mechanical and Electric Life	7000次
Normal Withstand Voltage (V)	AC300V
Withstand Voltage between poles and shell(V)	AC2500V
Withstand Voltage among disconnecting contacts(V)	AC1500V
Resistance Value between Poles and Shell	5MΩ
Connecting and Wiring Capacity	<ul style="list-style-type: none"> <li>◆ Tunnel Connecting Terminal</li> <li>◆ Terminal Connecting Area: 1~25 mm<sup>2</sup> cable is applicable</li> <li>◆ Connecting Screw is M5, Torque is 2.0N.m</li> </ul>

### 4.2.2 Working Parameters Sheet

Model	Rated Voltage (V)	Over-Voltage		Under-Voltage		Working Time of Over-Voltage	Working Time of Under-Voltage	Delay Resetting Time
		Working Value	Recovery Value	Working Value	Recovery Value			
NDGQ1Z	220	270V ± 5V	250V ± 5V	170V ± 5V	190V ± 5V	0.05S ≤ t ≤ 0.1S	0.5S ≤ t ≤ 1S	60S ± 10S
NDGQ1Z	230	280V ± 5V	250V ± 5V	170V ± 5V	190V ± 5V	0.05S ≤ t ≤ 0.1S	0.5S ≤ t ≤ 1S	60S ± 10S

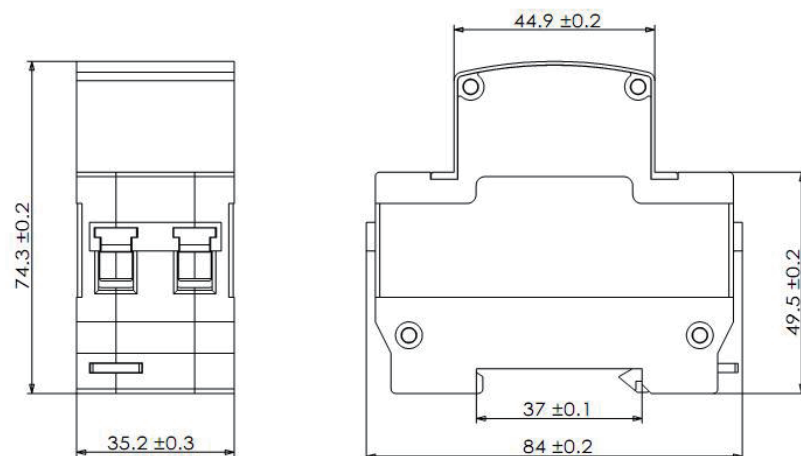
## 4.3 Status Indicator's Instruction

The Green light will twinkle after connecting the normal voltage;twinkling 60+/-10s later, OUPA switches on and the twinkling green light status will turn into solid green light status means the OUPA going to the normal working condition. OUPA will switch off together with twinkling red light when OUPA stay in over-voltage status.; The twinkling red light will turn into twinkling green light after the voltage return to normal level; Delaying 60+/-10s, OUPA will switch on and turn into solid green light. OUPA will switch off together with solid red light when OUPA stay in under-voltage status.; The solid red light will turn into twinkling green light after the voltage return to normal level; Delaying 60+/-10s, OUPA will switch on and turn into solid green light from twinkling green light.

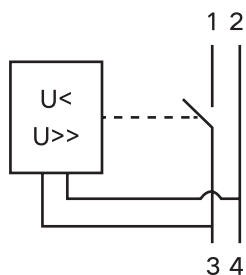
Indicator status as follow:

Solid Red Light	Twinkling Red Light	Solid Green Light	Twinkling Green Light
Under-Voltage Status	Over-Voltage Status	Normal Working	Over/Under-Voltage Delayed Resetting Status

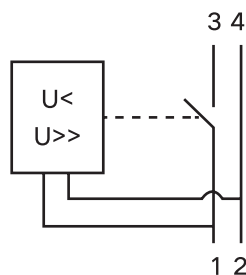
## 5. Outline and Mounting Dimension



## 6. Wiring Diagram



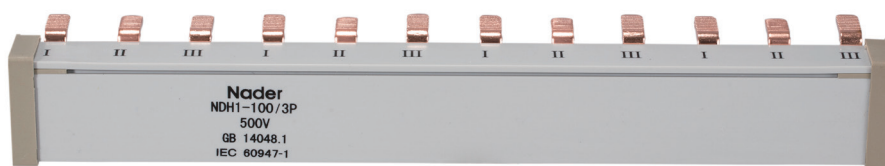
Upper Wiring Diagram



Lower Wiring Diagram

## 7. Ordering Types and Specifications (Tick ✓ in ☐)

Customer		Ordering Quantity:	Ordering Date:
Model	<input type="checkbox"/> NDGQ1Z		
Rated Working Current(A)	<input type="checkbox"/> 32 <input type="checkbox"/> 40 <input type="checkbox"/> 50 <input type="checkbox"/> 63 <input type="checkbox"/> 80		
Rated Working Voltage(V)	<input type="checkbox"/> AC220 <input type="checkbox"/> AC230		
Number of Poles	<input type="checkbox"/> 1PN		
Wiring Patter	<input type="checkbox"/> Upper Wiring <input type="checkbox"/> Lower Wiring		




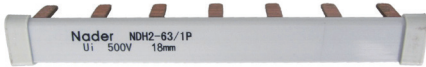
# NDH Series Bus-bar

2016 Edition

**Nader**



## 1. Product Overview

						
Model	NDH1-63/100			NDH2-63/100		
Rated Working Current (A)	Teeth Space (mm)	Rated Current (A)	Working Voltage (V)	Teeth Space (mm)	Rated Current (A)	Working Voltage (V)
	18 x n	63A/100A	500V	18 x n	63A/100A	500V

## 2. Product Features

### ● Applicable Scope

NDH1/NDH2 Bus-bar are the modularized accessory of NDM1-63,NDB2-63 and NDG1. They can be used to do the same-phase connection among multiple MCB's input terminals and also can do the connection among the terminal electric equipments with same-phase as a standard accessory.

### ● Design Features

- ◆ Bus-bar comprises comb copper bar and insulated sheath.
- ◆ Bus-bar comprises comb copper bar and insulated sheath.
- ◆ Impacted structure and easy to use.

### ● Standard

- ◆ GB 14048.1 Low-voltage switchgear and controlgear Part 1: General rules
- ◆ IEC 60947-1 Low-voltage switchgear and controlgear-Part 1:General rules

### 3. Working Condition

#### ● Applicable Condition

##### ◆ Ambient Usage Temperature:

★ Ambient Usage Temperature: -25°C~+55°C, the average temperature can't exceed +35°C within 24h. A negotiation should be started between customers and manufacturer when the ambient temperature is lower than -25°C.

★ Storage Temperature: -30°C ~ +70°C

##### ◆ Altitude

The altitude of the mounting site ≤ 2000m

##### ◆ Relative Usage Humidity and Relative Storage Humidity

The relative humidity shouldn't exceed 50% when the ambient air temperature is +60 degrees, higher humidity can be allowed in lower temperature. For example, the humidity can be 80% when the ambient temperature is +30 degrees. Necessary measures should be acted for the condensation produced by the changed temperature.

#### ● Pollution Degree

2

#### ● Protection Level

Level of Product Protection: IP20

#### ● Environmental Requirement

Comply with RoHS

## 4. Product Technical Characteristic

### 4.1 Model and Implication

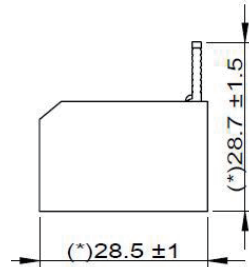
ND H □ - □ / □ / □		
1 2 3 4 5 6		
No.	Implication	NDH1
1	Brand Code	ND : <b>Nader</b>
2	Code	H : Bus-bar
3	Design Code	1 2
4	Rated Current	63A , 100A
5	Number of Poles	1 , 2 , 3
6	Gang	1 - 60

### 4.2 Technical Parameters

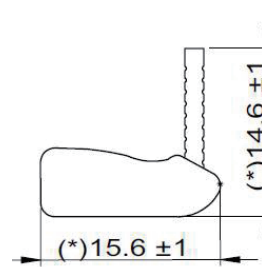
- ◆ Rated Insulated Voltage: 500V
- ◆ Applicable rated current: Up to 100A
- ◆ Conventional Thermal Current: 100A
- ◆ Withstand Voltage: 6KV
- ◆ Short-time Withstand Current: 25KA/0.5s
- ◆ Frequency Voltage: Withstand 2500V(AC50Hz)

## 5. Outline and Mounting Dimension

### 5.1 External Dimension



NDH1



NDH1

### 5.2 Bus-bar Length

- ◆ Classified by poles: 1P, 2P, 3P
- ◆ Classified by Length: The multiple of Length 18mm, such as: 5 times-90mm, 10 times-180mm or customized (the width between poles is 18mm), 60 times Max.
- ◆ Classified by Gang: Teeth quantity of every bus-bar, these teeth are used to connect the poles of MCB.

## 6. Ordering Types and Specifications (Tick ✓ in □)

Customer		Ordering Quantity:	Ordering Date:
Frame Rating	<input type="checkbox"/> NDH1-63/100 <input type="checkbox"/> NDH2-63/100		
Number of Poles	<input type="checkbox"/> 1P <input type="checkbox"/> 2P <input type="checkbox"/> 3P	<input type="checkbox"/> 1P <input type="checkbox"/> 2P <input type="checkbox"/> 3P	
Gang	1~60		
Accessory (Option)	Connector ( 30008300 )		













# NDA Series Outlet

2016 Edition

**Nader**

## 1. Product Overview

		
Model	NDA1-10/22	NDA1-16/34
Outlet Symbol		
Rated Working Voltage (V)	AC 250V	AC 250V
Rated Working Current (A)	10A	10A , 16A
Width (mm)	18	36
Module	2	4

			
Model	NDA1-16/46	NDA1-25/48	NDA3-10/34
Outlet Symbol			
Rated Working Voltage (V)	AC 440V	AC 440	AC 250V
Rated Working Current (A)	16	25	10A , 16A
Width (mm)	54	72	36
Module	6	8	4

Note:1 module=9mm

## 2. Product Features

### ● Applicable Scope

This Series Outlet can be used indoor or outdoor, household and similar sites. Only for AC, Rated current should not exceed 25A and Rated Voltage Range is: 50V-440V.

### ● Design Features

- ◆ This Series Outlet is installed in the modularized distribution box and other electric cabinet to connect related electric device.
- ◆ Seriation Product, Modularization.

### ● Standard

- ◆ GB 2099.1 Plug and socket-outlets for household and similar purposes-Part 1: General requirements.
- ◆ IEC 60884-1 Piuge and socket-outlets for household and similar purposes-Part 1: Genenral requirements.

## 3. Working Condition

### ● Applicable Condition

- ◆ Ambient Usage Temperature and Storage Temperature

Ambient Usage Temperature: -5°C~+40°C

- ◆ Altitude

The altitude of the mounting site ≤ 2000m

- ◆ Relative Usage Humidity and Relative Storage Humidity

The relative humidity shouldn't exceed 50% when the ambient air temperature is +60 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)

- **Applicable Types**

AC-22A

- **Applicable Types**

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

- **Mounting Method**

Mounted on TH35mm x 7.5 Standard Rail.

- **Mounting Direction**

Mounting Direction

- **Environmental Requirement**

Comply with RoHS

## 4. Product Technical Characteristic

### 4.1 Model and Implication

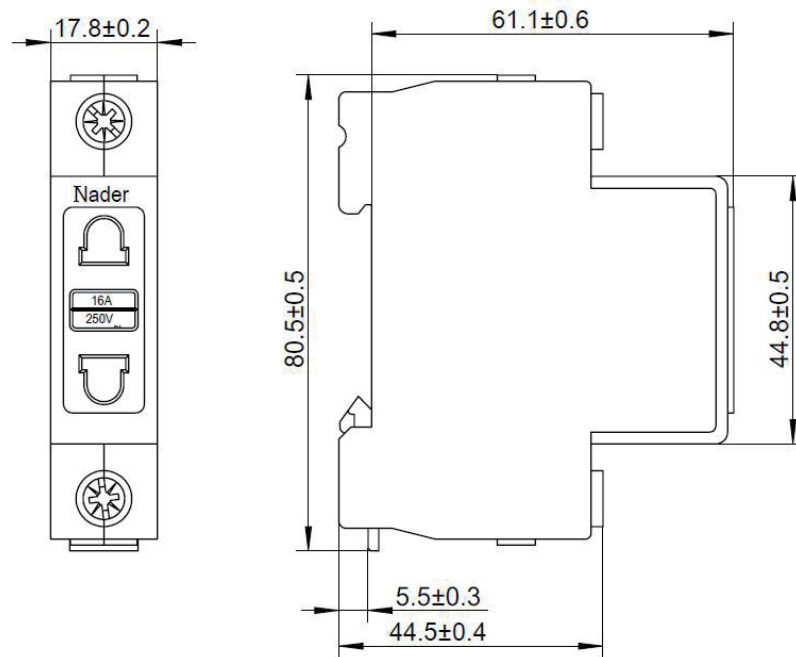
No.	Implication	NDA	
1	Brand Code	ND: <b>Nader</b>	
2	Code	A: Outlet	
3	Design Code	1	3
4	Rated Current	10A, 16A, 25A	10A, 16A
5	Holes	2, 3, 4	3
6	Width Module	2, 4, 6, 8	4

### 4.2 Technical Characteristics

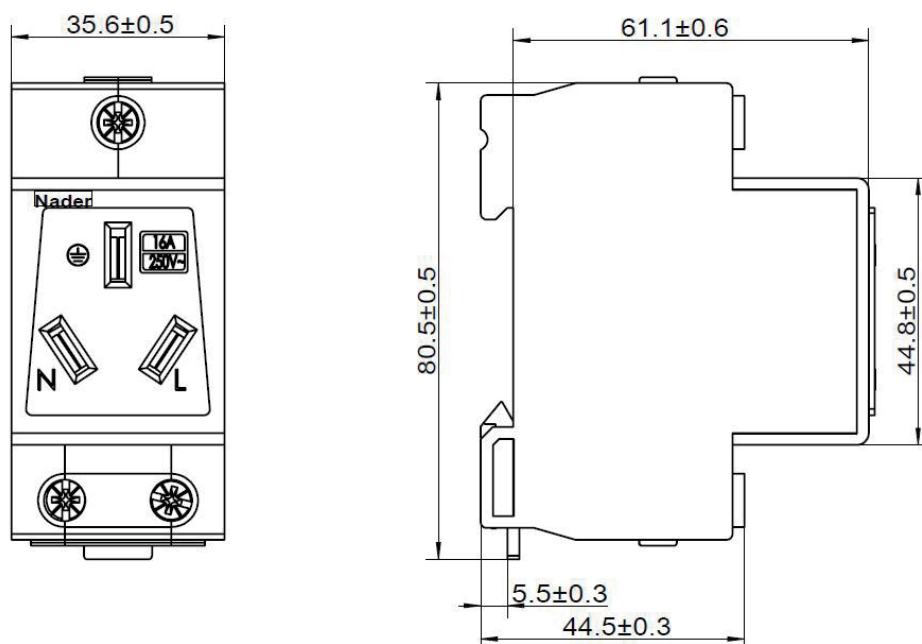
Model	NDA1-10/22	NDA1-16/34	NDA1-16/46	NDA1-25/48	NDA3-10/34
Rated Voltage	AC250V	AC250V	AC250V	AC440V	AC250V
Rated Current	10A	10A	16A	25A	10A
Holes	2	3	4		3
Width Module	2	4	6	8	4
Terminal Connecting Area	2~25 mm <sup>2</sup> cable is applicable	2~25 mm <sup>2</sup> cable is applicable	2~25 mm <sup>2</sup> cable is applicable		1~6 mm <sup>2</sup> cable is applicable

## 5. Outline and Mounting Dimension

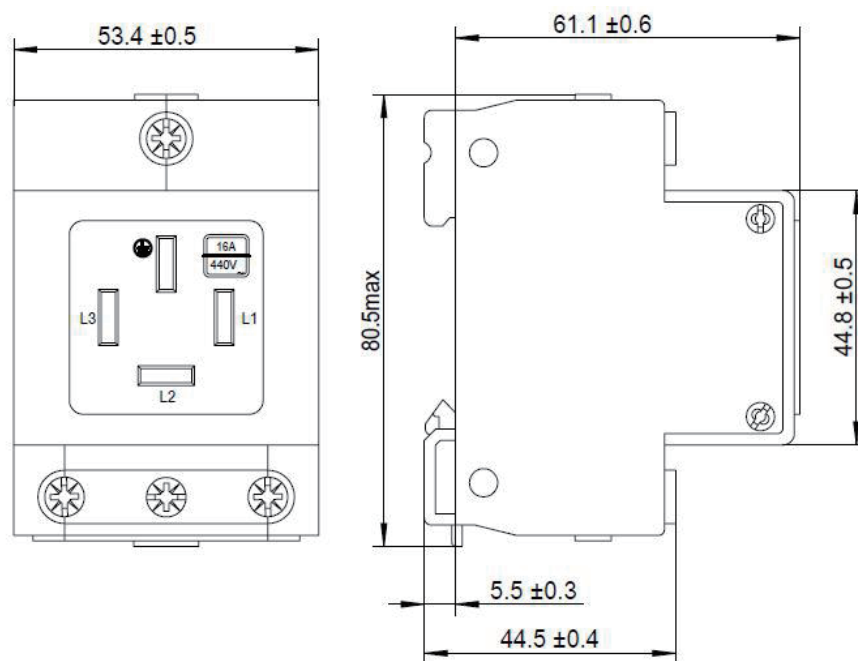
### 5.1 NDA1 ( External Dimension of 2 Holes )



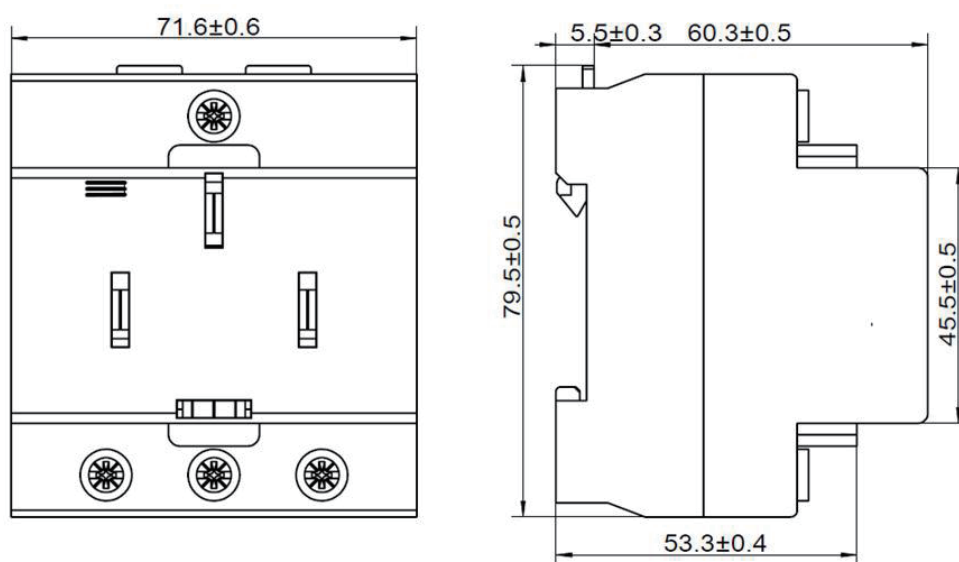
### 5.2 NDA1-16/34 ( External Dimension of 3 Holes )



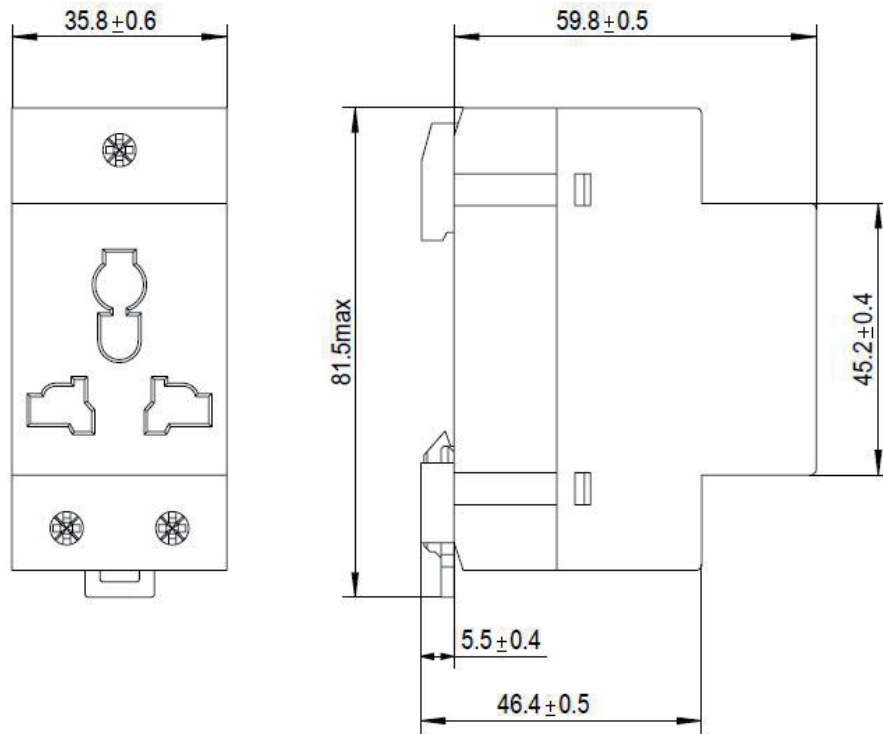
### 5.3 NDA1-16/46 ( External Dimension of 4 Holes )



### 5.4 NDA1-25/48 ( External Dimension of 4 Holes )



## 5.5 NDA3-16/34 ( External Dimension of 3 Holes )



## 6. Ordering Types and Specifications (Tick ✓ in ☐)

Customer	Ordering Quantity:	Ordering Date:
Frame Rating	<input type="checkbox"/> NDA1-10/22 <input type="checkbox"/> NDA1-10/34 <input type="checkbox"/> NDA1-16/46 <input type="checkbox"/> NDA1-25/48 <input type="checkbox"/> NDA3-16/34	
Number of Holes	<input type="checkbox"/> 2 Holes <input type="checkbox"/> 3 Holes <input type="checkbox"/> 4 Holes	






# NDM1L (NDM1) Series RCBO

2016 Edition

**Nader**

## 1. Product Overview

			
Model	NDM1L-32	NDM1L-50	NDM1L-100
Rated Voltage	AC230/240V(1PN、2P) AC380/400/ 415V(3PN、3P、4P)	AC230/240V(1PN、2P) AC380/400/ 415V(3PN、3P、4P)	AC230V(1PN、2P、3PN、4P) AC400V(3P)
Rated Current	1A、2A、3A、4A、5A、 6A、10A、16A、20A、 25A、32A	6A、10A、16A、20A、 25A、32A、40A、50A、 10A、16A、20A、25A、 32A、40A、50A	50A、63A、80A、100A
Rated Residual Operation Current	30mA、50mA、 100mA、300mA	30mA、50mA、 100mA、300mA	100mA

## 2. Product Features

### ● Applicable Scope

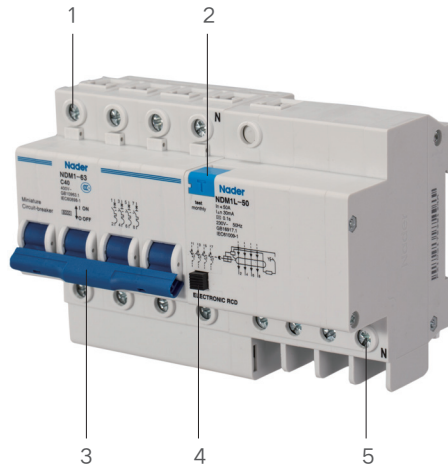
NDM1L-32, NDM1L-50 and NDM1L-100 Series RCBOs are linked to the right side of both NDM1-63 and NDM1-125. These series RCBOs can protect people from direct or indirect electric shock, protect the circuits from earth leakage. RCBOs are widely used in Low-voltage distribution of industry, civil building, energy, telecommunication and infrastructure etc. to protect the circuits from short circuits, over-current, leakage, disconnection and over/under-voltage.

### ● Design Features

- ◆ Visual window's design: Make the product's switching-closing status more clearly to see.
- ◆ Modularized and Assemble Structure: Easily to remove and mount.

## ● Structure Features

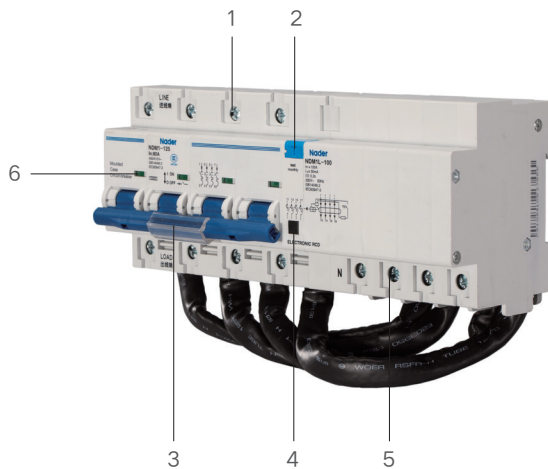
### ◆ NDM1L-32、50 External Diagram



NDM1L-32、50 External Structure Diagram :

- 1 : Line
- 2 : Test Button
- 3 : Operation Handle
- 4 : Reset Button
- 5 : Load

### ◆ NDM1L-100 External Diagram



NDM1L-100 External Diagram :

- 1 : Line
- 2 : Test Button
- 3 : Operation Handle
- 4 : Reset Button
- 5 : Load
- 6 : Status Indicated Window

## ● Standard

### ◆ Standard As Follow:

- ★ 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

### ◆ NDM1L-100 Standard As Follow :

- ★ GB 14048.2 Low-voltage switchgear and control gear Part 2: Circuit-breakers
- ★ IEC 60947-2 Low-voltage switchgear and controlgear-Part 2: Circuit-breakers



## 3. Working Condition

### ● Applicable Condition

- ◆ Ambient Usage Temperature and Storage Temperature

Ambient Usage Temperature: -25°C~+55°C, Standard Temperature: +30°C, correction factor of different ambient usage temperature refer to sheet 1

Storage Temperature:-30°C~+70°C.

- ◆ Altitude

The altitude of the mounting site  $\leq$  2000m

- ◆ 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 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

<div> <div>ND</div> <div>M</div> <div>1</div> <div>L</div> <div>-</div> <div>□</div> <div>/</div> <div>□</div> <div>□</div> <div>□</div> <div>□</div> </div>				
<div> <div>1</div> <div>2</div> <div>3</div> <div>4</div> <div>5</div> <div>6</div> <div>7</div> <div>8</div> <div>9</div> </div>				
No.	Implication	NDM1L		
1	Brand Code	ND : <b>Nader</b>		
2	Code	M : MCB		
3	Design Code	1		
4	Leakage	L: Leakage Functional Code ( 30mA , 50mA , 100mA , 300mA )	L: Leakage Functional Code ( 30mA , 50mA , 100mA , 300mA )	L: Leakage Functional Code (100mA)
5	Frame Rating	32A	50A	100A
6	Instantaneous Tripping Characteristics	B: Instantaneous Tripping Range $3I_n \sim 5I_n$ ; C: Instantaneous Tripping Range $5I_n \sim 10I_n$ ; D: Instantaneous Tripping Range $10I_n \sim 14I_n$ ;	B: Instantaneous Tripping Range $3I_n \sim 5I_n$ ; C: Instantaneous Tripping Range $5I_n \sim 10I_n$ ; D: Instantaneous Tripping Range $10I_n \sim 14I_n$ ;	C: Instantaneous Tripping Range $8I_n ( 1 \pm 20\% )$ ; D: Instantaneous Tripping Range $12I_n ( 1 \pm 20\% )$ ;
7	Rated Current	1A , 2A , 3A , 4A , 6A , 10A , 16A , 20A , 25A , 32A	6A , 10 , 16A , 20A , 25A , 32A , 40A , 50A	50A , 63A , 80A , 100A
8	Over-Voltage and Under-Voltage Functional Code	/	No Code: Normal Leakage Products GQ : Indicates over-voltage and under-voltage protective function G: Indicates over-voltage protective function Q: Indicates under-voltage protective function	No Code: Normal Leakage Products GQ : Indicates over-voltage and under-voltage protective function G: Indicates over-voltage protective function Q: Indicates under-voltage protective function
9	Number of Poles	1PN、2P、3P 3PN、4P	1PN、2P、3P 3PN、4P	1PN、2P、3P 3PN、4P

## 4.2 Technical Parameters

	NDM1L-32	NDM1L-50	NDM1L-100
Rated Voltage (V)	AC230/240V(1PN、2P) AC380/400/ 415V(3PN、3P、4P)	AC230/240V(1PN、2P) AC380/400/ 415V(3PN、3P、4P)	AC230V(1PN、2P、3PN、4P) AC400V(3P)
Rated Current (A)	1、2、3、4、5、6、 10、16、20、25、32	6、10、16、20、25、 32、40、50	50、63、80、100
Tripping Characteristics of Residual Current	AC and ELE	AC and ELE	AC and ELE
Rated Residual Operation Current $I_{\Delta n}$ (mA)	30、50、100、300	30、50、100、300	100
Rated Insulated Voltage (V)	AC500V	AC500V	AC500V
Rated Ultimate Short Circuit Breaking Current $I_{cu}$	6kA (B、C) 4.5kA (D)	6kA (B、C6A~40A); 4.5kA (B、C50A、D)	10kA
Rated Short-Circuit Operation Breaking Current ( $I_{cs}$ )	6kA (B、C) 4.5kA (D)	6kA(B、C6A~40A); 4.5kA (B、C50A、D)	10kA
Rated Residual Connecting and Breaking Current ( $I_{\Delta m}$ )	500A	500A	2500A
Rated Working Frequency (Hz)	50/60	50/60	50/60
Over-Voltage Operation Value and Time (Uover)	/	280V $\pm$ 12V/0.1s	280V $\pm$ 12V/0.1s
Under-Voltage Operation Value and Time (Uover)	/	170V $\pm$ 7V/1s	170V $\pm$ 7V/1s
Mechanical and Electric Life	20000	20000	20000
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>	<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>	<ul style="list-style-type: none"> <li>◆ Tunnel Connecting Terminal</li> <li>◆ Terminal Connecting Area: 1~50 mm<sup>2</sup> cable is applicable</li> <li>◆ Connecting Screw is M6, Torque is 4.0N.m</li> </ul>
Certificate	CCC	CCC	CCC

## ● Temperature Correction Factor Sheet (1)

Ambient Temperature (°C) Correction Current (A) Rated Current (A)	-35	-30	-25	-20	-15	-10	-5	-0	5	10	15
1	1.27	1.25	1.23	1.21	1.19	1.17	1.15	1.13	1.10	1.08	1.06
3	3.89	3.83	3.76	3.70	3.64	3.57	3.50	3.44	3.37	3.30	3.22
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
40	51.63	50.86	50.04	49.21	48.37	47.51	46.63	45.74	44.83	43.90	42.95
50	64.92	63.97	62.92	61.86	60.77	59.67	58.54	57.40	56.23	55.05	53.81
63	83.48	82.06	80.64	79.19	77.72	76.22	74.70	73.14	71.54	69.91	68.24
80	135	130	126	122	118	115	112	108	104	99	95
100	160	155	150	146	142	137	133	129	125	122	118

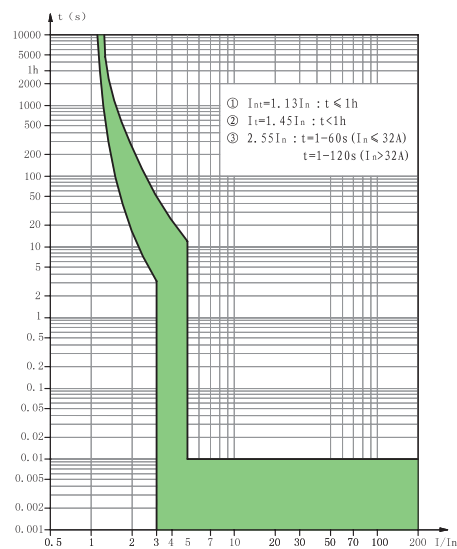
Ambient Temperature (°C) Correction Current (A) Rated Current (A)	20	25	30	35	40	45	50	55	60	65	70
1	1.05	1.02	1.00	0.97	0.94	0.91	0.89	0.86	0.83	0.80	0.77
3	3.14	3.06	3.00	2.92	2.84	2.76	2.67	2.58	2.49	2.38	2.27
6	6.27	6.14	6.00	5.84	5.68	5.52	5.36	5.19	5.01	4.83	4.64
10	10.67	10.34	10.00	9.63	9.24	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
40	41.98	40.99	40.00	38.93	37.85	36.75	35.61	34.43	33.21	31.95	30.63
50	52.56	51.28	50.00	47.82	46.24	44.81	43.33	41.81	40.23	38.58	35.77
63	66.53	64.78	63.00	60.11	58.19	56.21	54.16	52.03	49.81	47.50	43.05
80	91	88	85	82	80	75.5	72.5	68	64.5	58	52.5
100	114	111	108	103	100	94	88	82	75	68	58

## 4.3 Tripping Curve

### 4.3.1 NDM1L-32、NDM1L-50 Tripping Curve

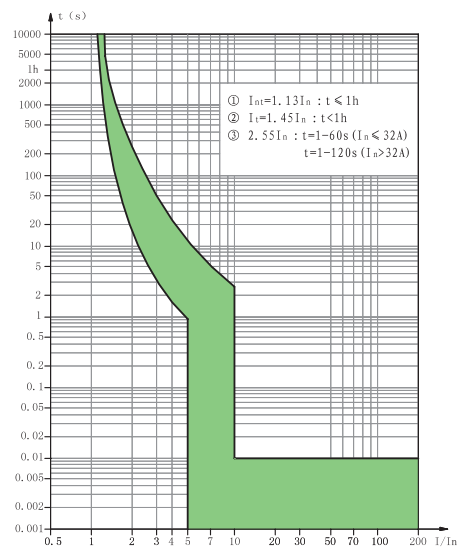
#### ● B Curve

- ★ Protect non-inductive and micro inductive circuits
- ★ Rated Current: 1A-63A
- ★ Tripping Characteristics: Instantaneous tripping range:  $3I_n-5I_n.s$



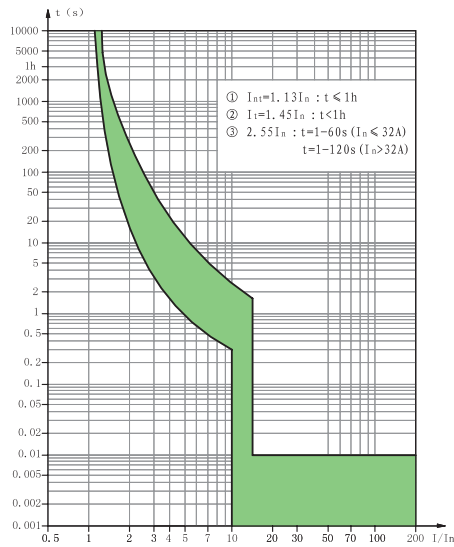
#### ● C Curve

- ★ Protect Nominal Load and Distribution Cables
- ★ Rated Current: 1A-63A
- ★ Tripping Characteristics: Instantaneous tripping range:  $5I_n-10I_n$



## ● D Curve

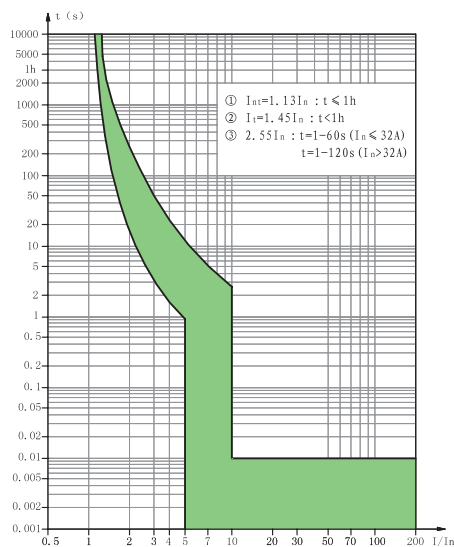
- ★ Protect industrial distribution systems
- ★ Rated Current: 1A-63A
- ★ Tripping Characteristics: Instantaneous tripping range:  $10I_n$ - $14I_n$



### 4.3.2 NDM1L-100 Tripping Curve

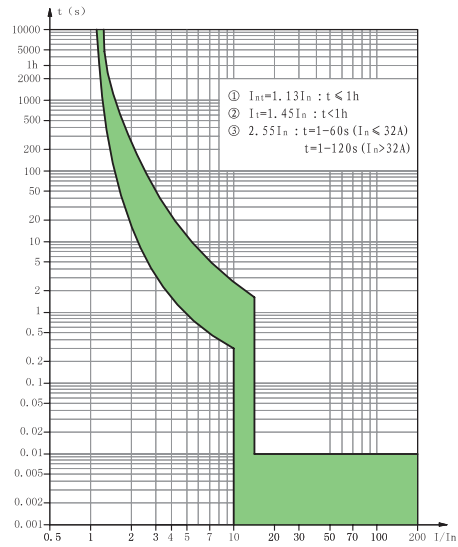
## ● C Curve

- ★ Protect Nominal Load and Distribution Cables
- ★ Rated Current: 50A-100A
- ★ Tripping Characteristics: Instantaneous tripping range:  $8I_n (1 \pm 20\%)$

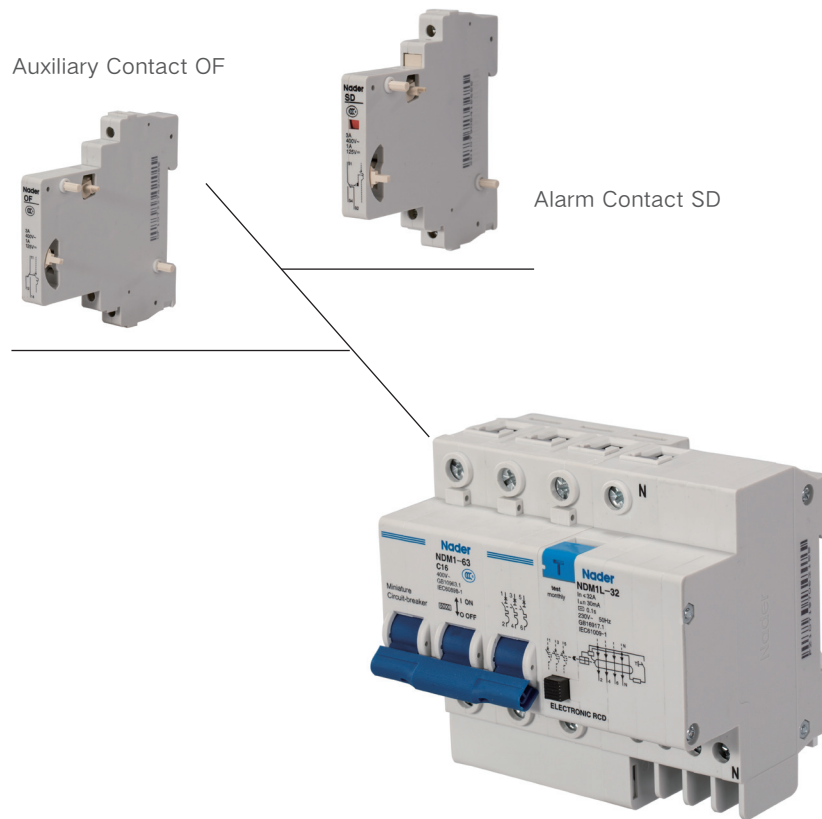


## ● D Curve

- ★ Protect industrial distribution systems
- ★ Rated Current: 50A-100A
- ★ Tripping Characteristics: Instantaneous tripping range:  $12I_n$  (  $1 \pm 20\%$  )



## 5. Accessory



### NDM1L-32、NDM1L-50、NDM1L-100 Accessory Types

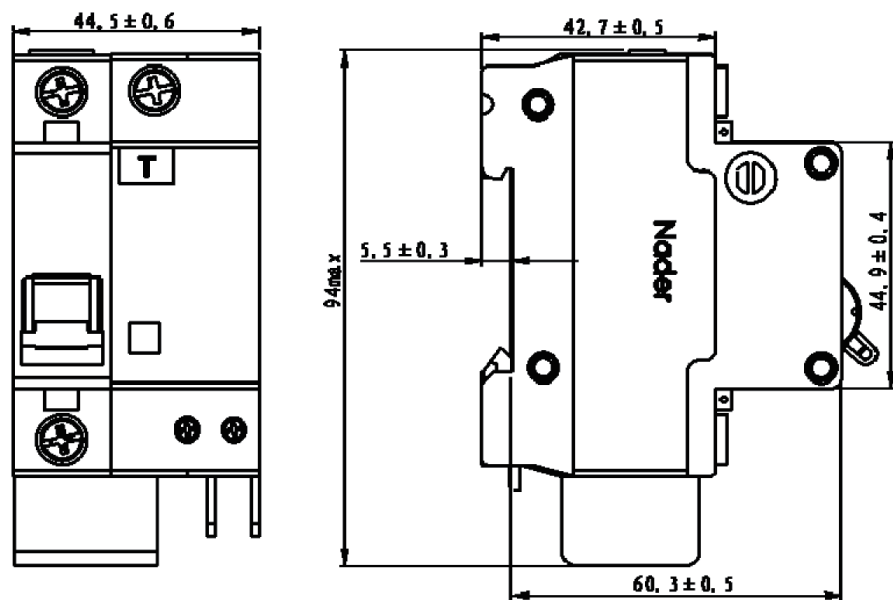
No.	Name	Accessory Code	Function and Matched Quantity
1	Auxiliary Contact	OF	Linked to the left side of MCB to indicate OPEN or CLOSE status of the associated breaker. Matched quantity: Max 3 Pcs
2	Alarm Contact	SD	Linked to the left side of MCB to indicate the accidental tripping status of the associated breaker. Matched quantity: 3 Pcs Max.

Note: Accessory parameters, please refer to "OF、SD" specimens.

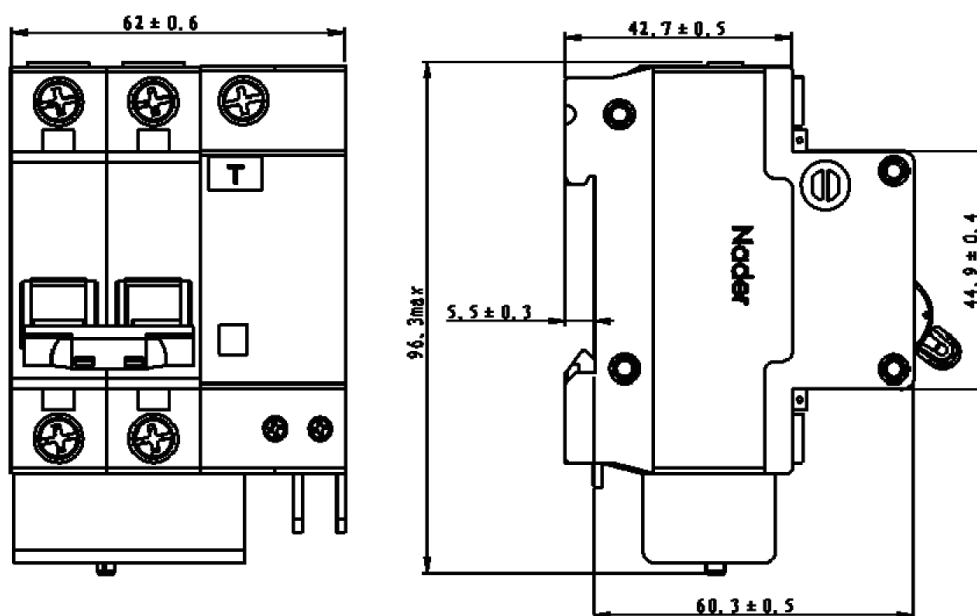


## 6. Outline and Mounting Dimension

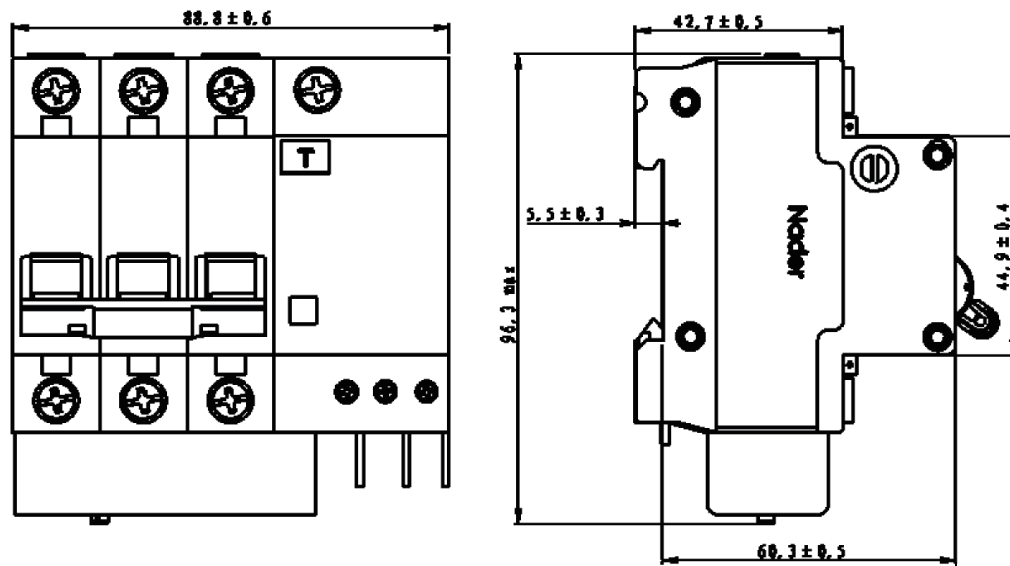
### 6.1 NDM1L-32 Rail Mounting Dimension



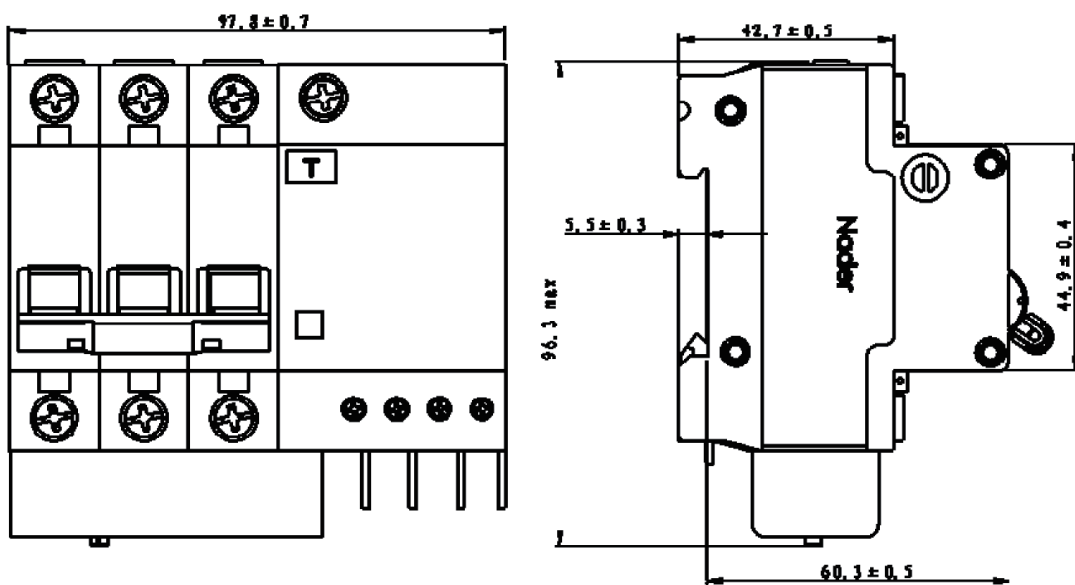
1P+N



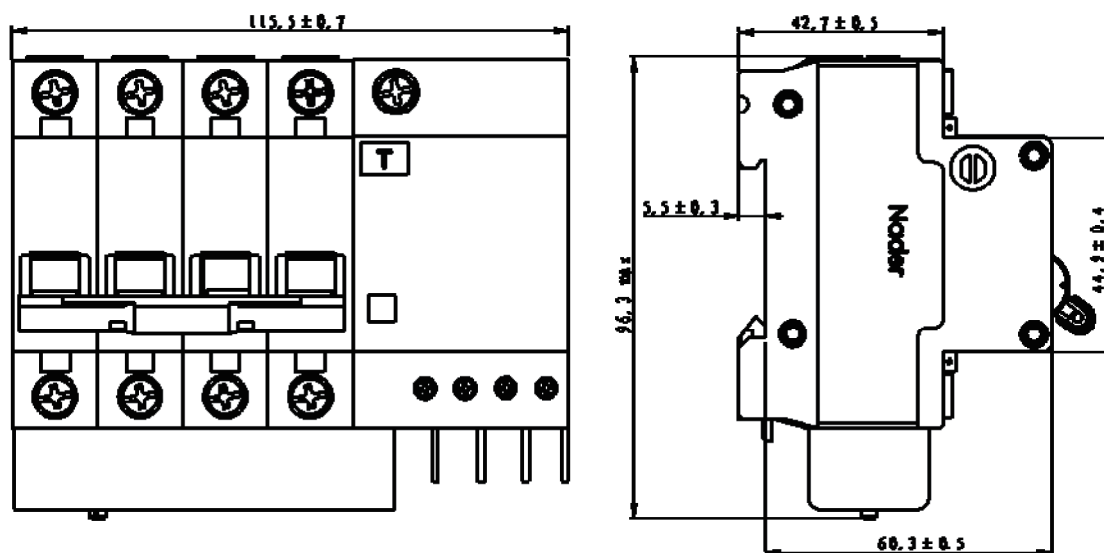
2P



3P

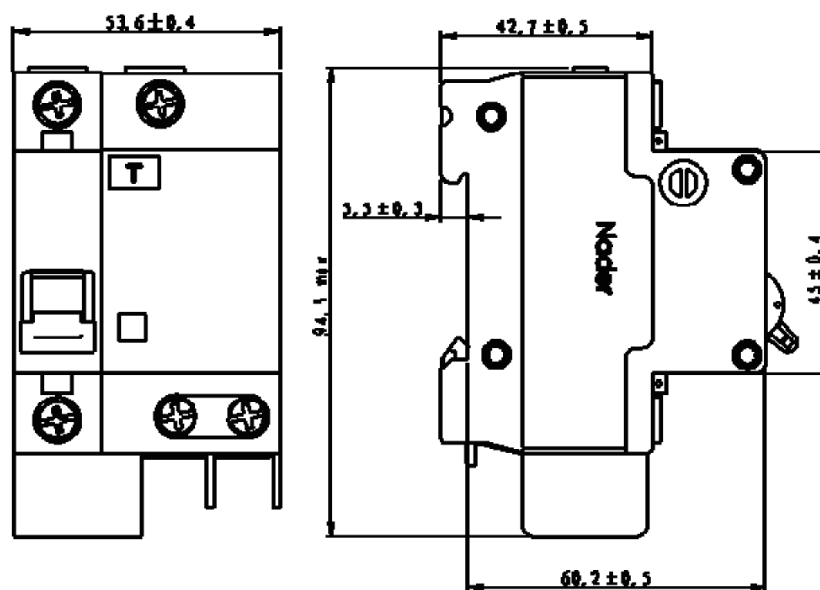


3P+N

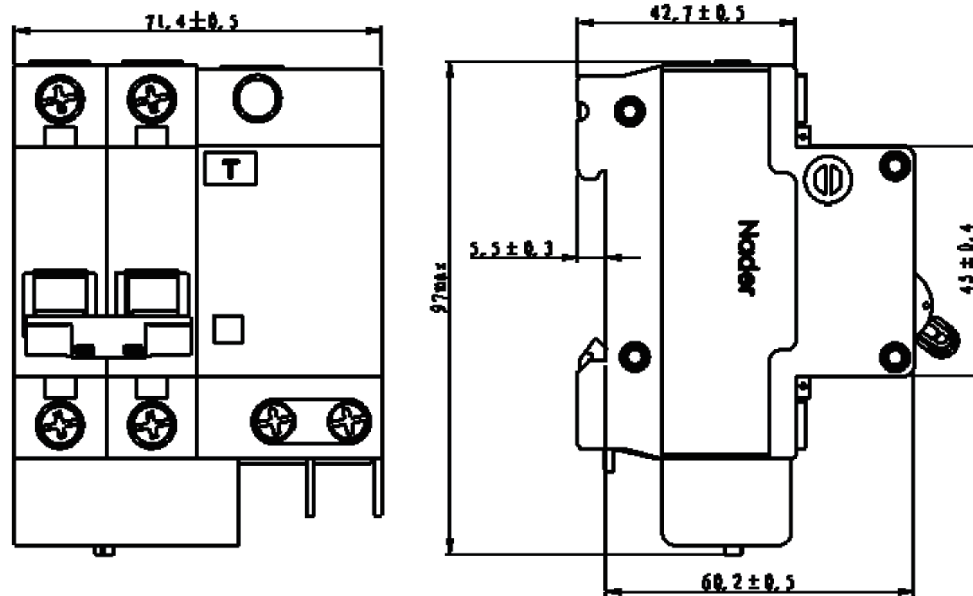


4P

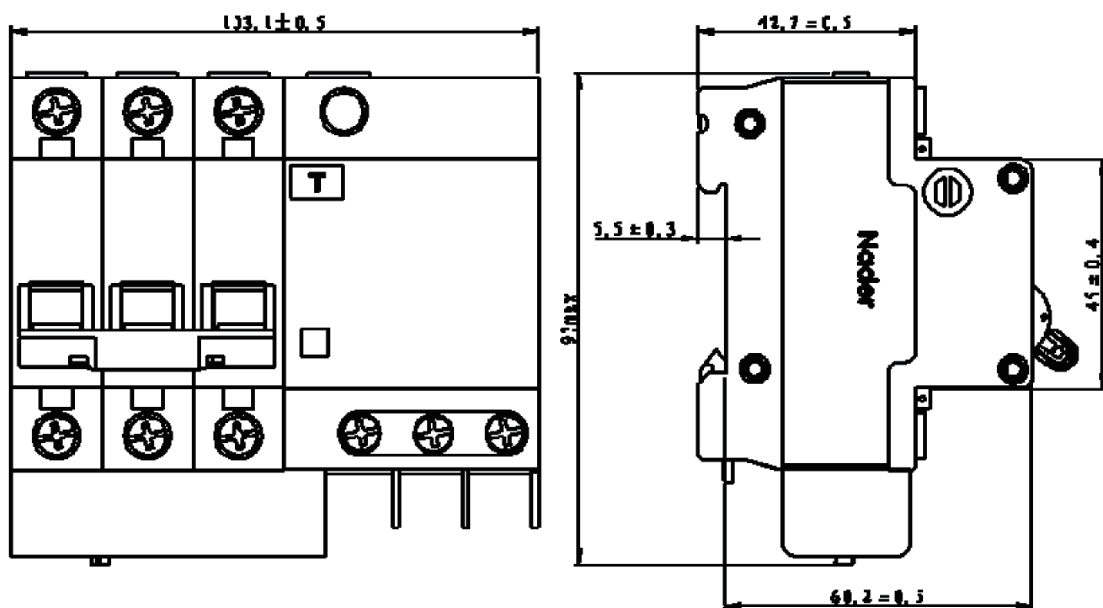
## 6.2 NDM1L-50 Rail Mounting Dimension



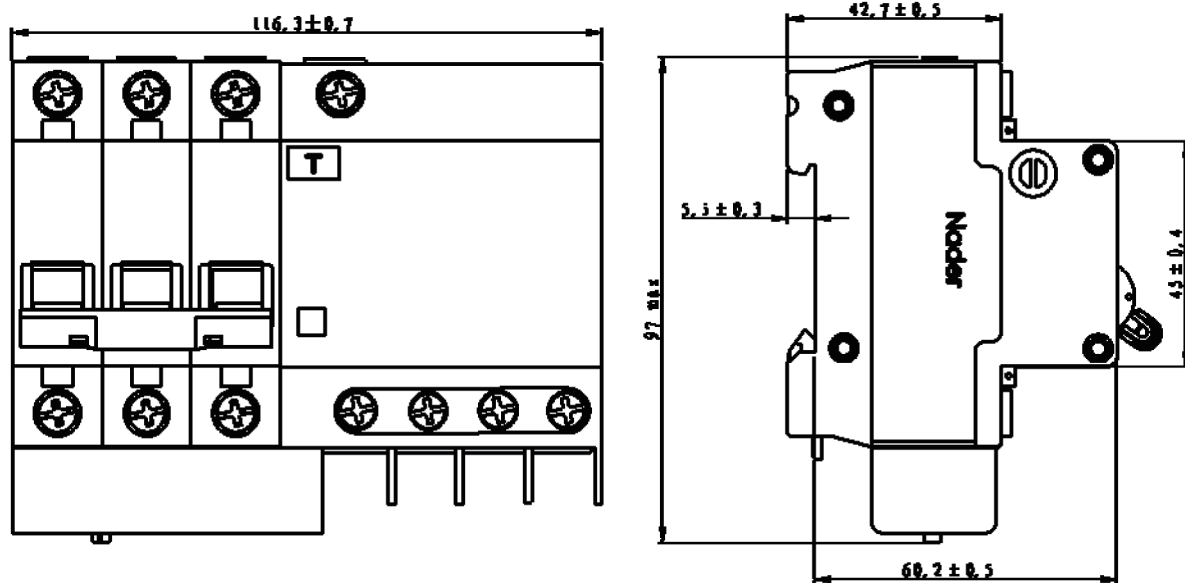
1PN



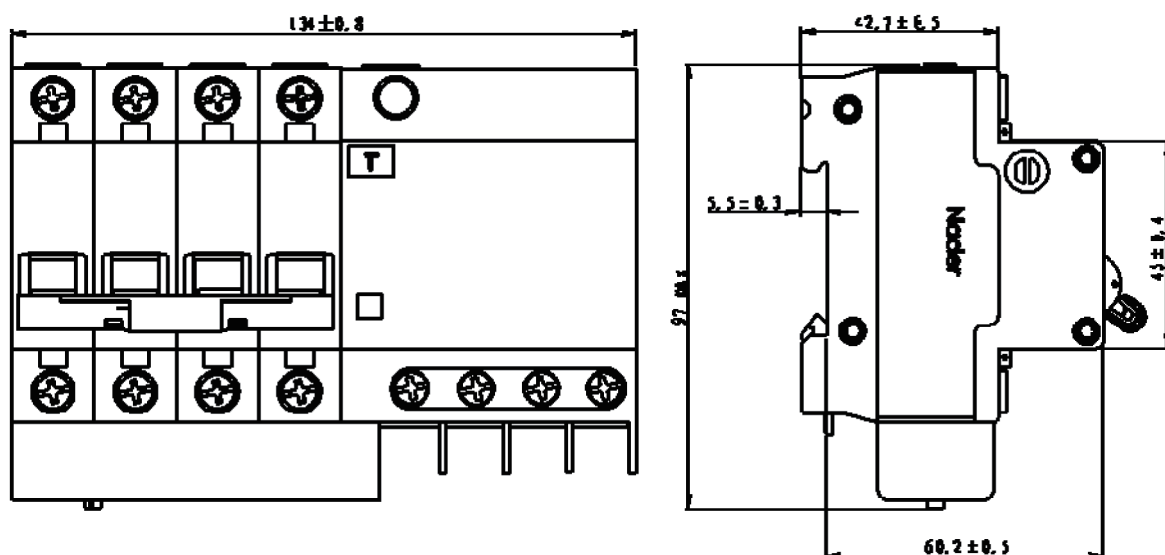
2P



3P

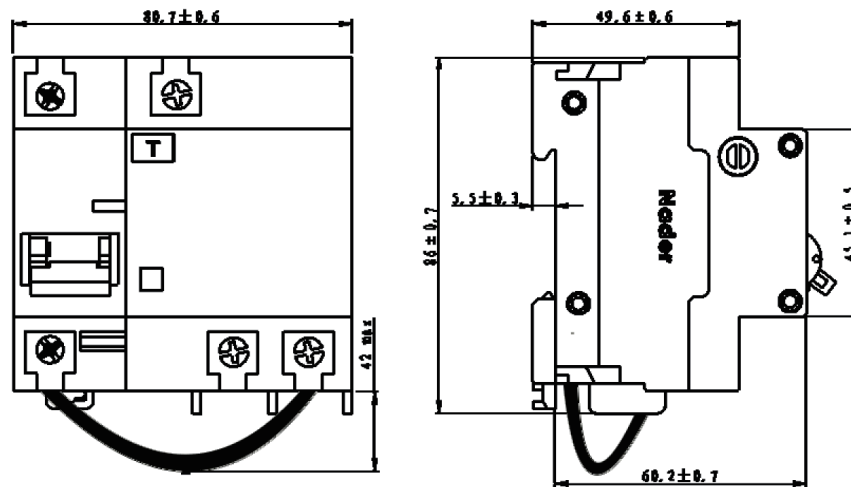


3PN

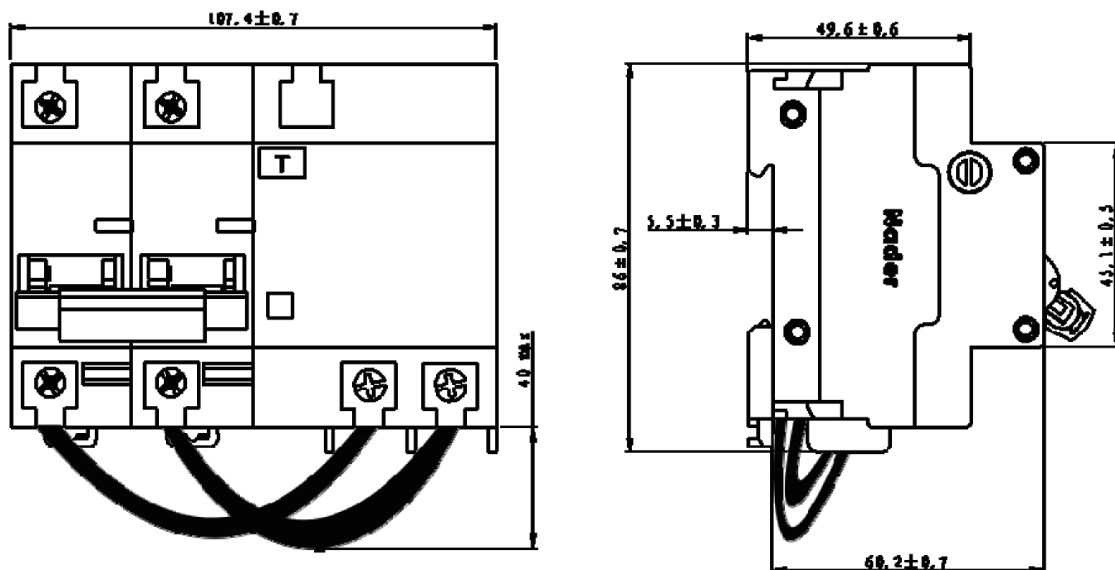


4P

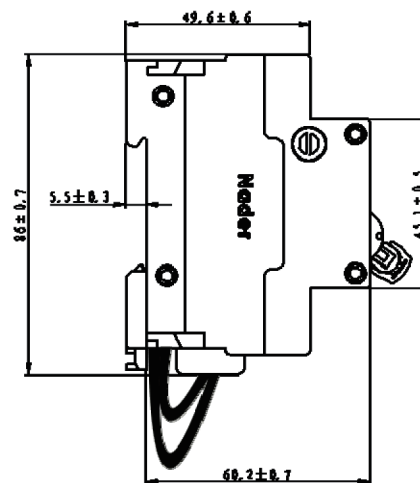
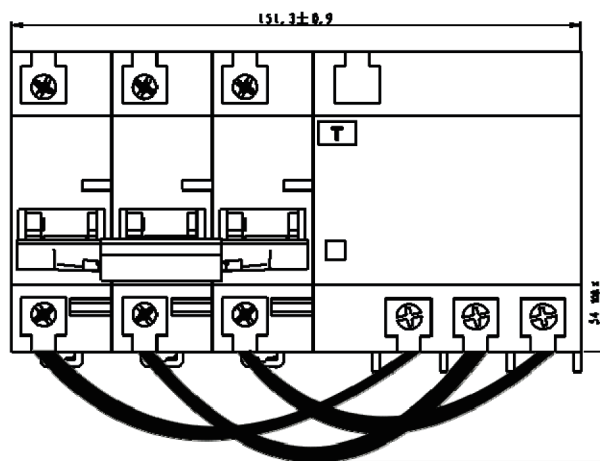
## 6.3 NDM1L-100 Rail Mounting Dimension



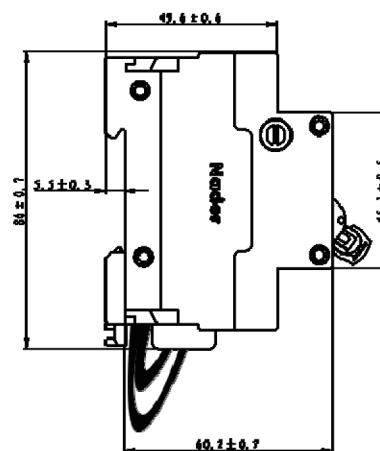
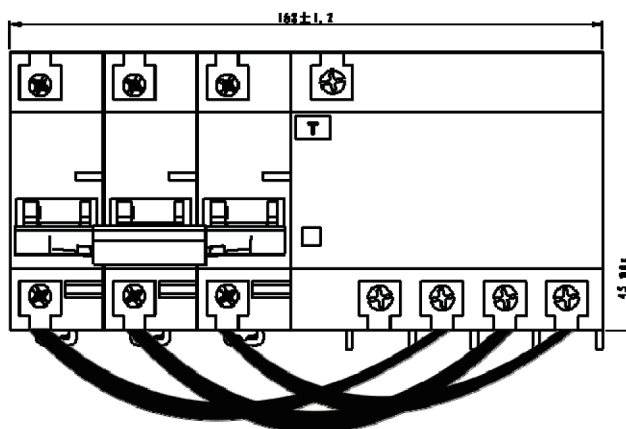
1PN



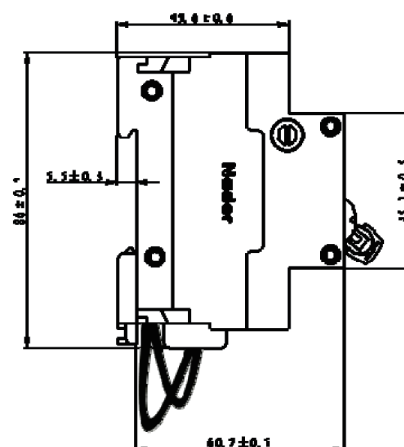
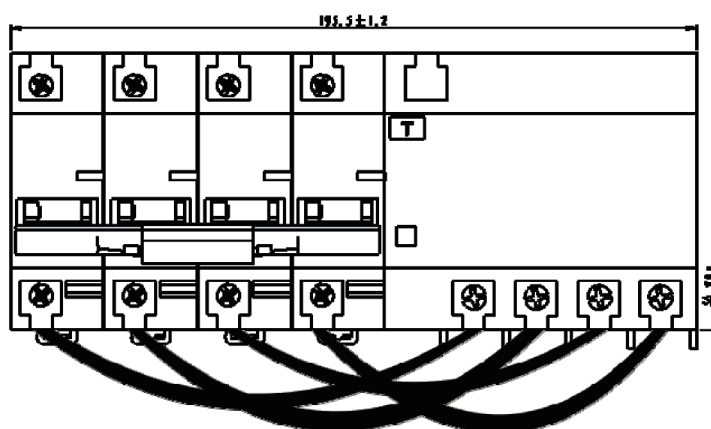
2P



3P

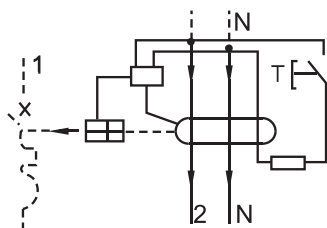


3PN

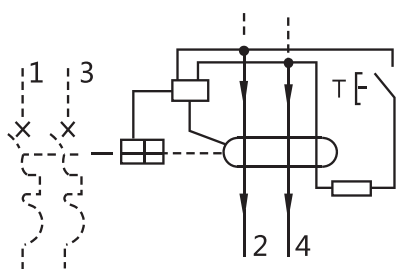


4P

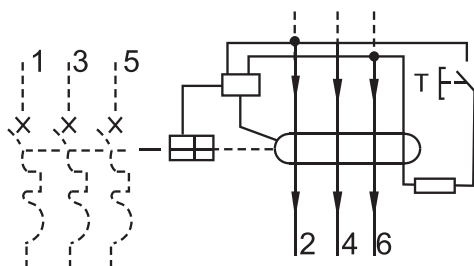
## 7. Wiring Diagram



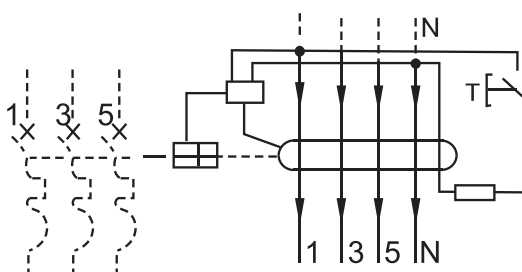
1PN Wiring Diagram



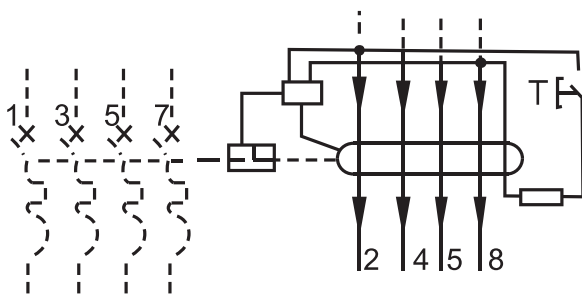
2P Wiring Diagram



3P Wiring Diagram



3PN Wiring Diagram

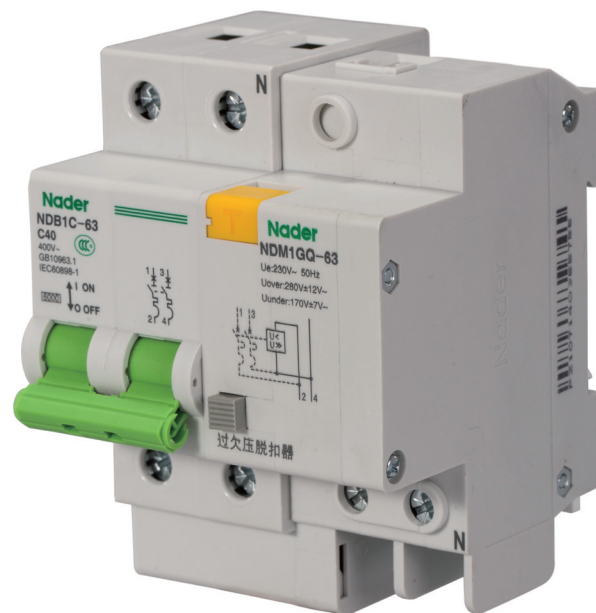


4P Wiring Diagram



## 8. Ordering Types and Specifications (Tick ✓ in ☐)

Customer		Ordering Quantity:	Ordering Date:
Frame Rating	<input type="checkbox"/> NDM1L-32 <input type="checkbox"/> NDM1L-50	<input type="checkbox"/> NDM1L-100	
Tie Breakers	<input type="checkbox"/> NDM1A-63	<input type="checkbox"/> NDM1A-125	
Number of Poles	<input type="checkbox"/> 1PN <input type="checkbox"/> 2P <input type="checkbox"/> 3P <input type="checkbox"/> 3PN <input type="checkbox"/> 4P		
Rated Working Voltage(V)	<input type="checkbox"/> AC230/240 <input type="checkbox"/> AC380/400/415 <input type="checkbox"/> Other		
Rated Working Current(A)	1、2、3、4、5、6、10、16、20、25、32、40、50、63、80、100		
Rated Residual Operation Current I $\Delta$ n(mA)	<input type="checkbox"/> 30 <input type="checkbox"/> 50 <input type="checkbox"/> 100 <input type="checkbox"/> 300 <input type="checkbox"/> Other	<input type="checkbox"/> 100 <input type="checkbox"/> Other	
Instantaneous Tripping Characteristics	<input type="checkbox"/> B : Instantaneous tripping range: 3In-5In, protect non-inductive and micro inductive circuits <input type="checkbox"/> C : Instantaneous tripping range: 5In-10In, protect Nominal Load and Distribution Cables <input type="checkbox"/> D : Instantaneous tripping range: 10In-14In, Protect industrial distribution systems		
Over-Voltage and Under-Voltage Functional Code	<input type="checkbox"/> GQ : Indicates over-voltage and under-voltage protective function <input type="checkbox"/> G : Indicates over-voltage protective function <input type="checkbox"/> Q : Indicates under-voltage protective function <input type="checkbox"/> : Without over-voltage and under-voltage protective function		







# NDM1GQ Series

## Under-voltage and Over-voltage Protective Breaker

2016 Edition

**Nader**

1. Product Overview

				
Model	NDM1GQ-50	NDM1GQ-63	NDM1GQ-50	NDM1GQ-63
Rated Voltage	AC380/400/415V(4P)	AC230/ 240V(1PN、2P)	AC380/400/ 415V(4P)	AC230/ 240V(1PN、2P)
Rated Current	1、2、3、4、5、 6、10、16、20、 25、32、40、50	1、2、3、4、5、 6、10、16、20、 25、32、40、 50、63	1、2、3、4、5、 6、10、16、20、 25、32、40、50	1、2、3、4、5、 6、10、16、20、 25、32、40、 50、63
Adaptive Breaker	NDM1-63	NDM1-63	NDB1C-63	NDB1C-63

## 2. Product Features

### ● Applicable Scope

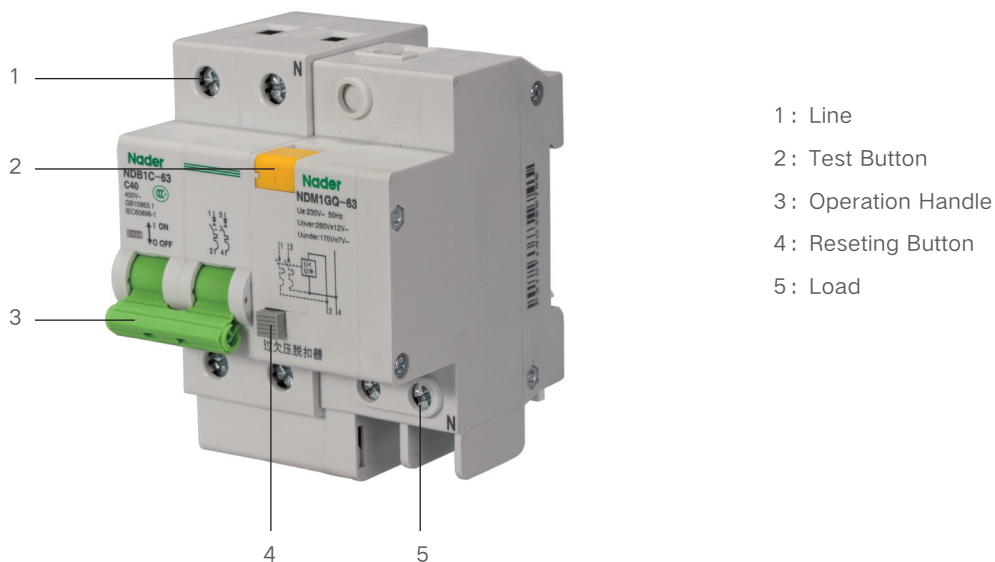
NDM1GQ Series Product adopts the assemble structure( between MCCB and under-voltage&over-voltage protective breaks) to do the protection against over voltage,over current and short circuit. It is a kind of multi-functional breakers and widely used in Low-voltage distribution of industry,civil building ,energy,telecommunication and infrastructure etc.

### ● Design Features

- ◆ Visual window's design: Make the product's switching-closing status more clearly to see.
- ◆ Modulation Structure:Easily to assemble and diversify

### ● Structure Features

- ◆ NDM1GQ External Diagram



### ● Standard

- ◆ The Subjected MCB's Complied Standards
  - ★ GB 16917.1 Residual current operated circuit-breakers with integral overcurrent 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
- ◆ NDM1L-100 Standards as Follow:
  - ★ GB 14048.2 Low-voltage switchgear and controlgear-Part 2: Circuit-breakers
  - ★ IEC 60947-2 Low-voltage switchgear and controlgear-Part 2: Circuit-breakers

## 3. Working Condition

### ● Applicable Condition

- ◆ Ambient Usage Temperature and Storage Temperature

Ambient Usage Temperature: -25°C~+55°C, Standard Temperature:+30°C, correction factor of different ambient usage temperature refer to sheet 1

Storage Temperature: -30°C~+70°C.

- ◆ Altitude

The altitude of the mounting site  $\leq$  2000m

- ◆ 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 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

<div> <div>ND</div> <div>M</div> <div>1</div> <div><input type="text"/></div> <div>- <input type="text"/> / <input type="text"/></div> <div><input type="text"/></div> <div><input type="text"/></div> </div>							
<div> <div>1</div> <div>2</div> <div>3</div> <div>4</div> <div>5</div> <div>6</div> <div>7</div> <div>8</div> </div>							
No.	Implication	Instruction					
1	Brand Code	ND : <b>Nader</b>					
2	Code	M					
3	Design Code	1					
4	Over-Voltage and Under-Voltage Functional Code	GQ : Indicates over-voltage and under-voltage protective function G : Indicates over-voltage protective function Q : Indicates under-voltage protective function					
5	Frame Rating	50		63			
6	Instantaneous Tripping Characteristics	B : Instantaneous Tripping Range: $3I_n \sim 5I_n$ ; C : Instantaneous Tripping Range: $5I_n \sim 10I_n$ ; D : Instantaneous Tripping Range: $10I_n \sim 14I_n$ ;		B : Instantaneous Tripping Range: $3I_n \sim 5I_n$ ; C : Instantaneous Tripping Range: $5I_n \sim 10I_n$ ; D : Instantaneous Tripping Range: $10I_n \sim 14I_n$ ;			
7	Rated Current ( A )	1、2、3、4、5、6、10、16、20、25、32、40、50、63		1、2、3、4、5、6、10、16、20、25、32、40、50、63			
8	Number of Poles	4P		1PN, 2P			

## 4.2 Technical Parameters

	NDM1GQ-50	NDM1GQ-63
Rated Voltage (V)	AC380/400/415V	AC230/240V
Number of Poles	4P	1PN,2P
Rated Current In(A)	1, 2, 3, 4, 5, 6, 10, 16, 20, 25, 32, 40, 50	1, 2, 3, 4, 5, 6, 10, 16, 20, 25, 32, 40, 50, 63
Rated Insulated Voltage Ui(V)	AC500V	AC500V
Rated Impulse Withstand Voltage (Uimp)	4kV	4kV
Rated Ultimate Short Circuit Breaking Current (Icu)	6kA (B、C1A~40A) ; 4.5kA (B、C50A, 63A, D)	6kA (B、C1A~40A) ; 4.5kA (B、C50A, 63A, D)
Rated Short-Circuit Operation Breaking Current (Ics)	6kA (B、C1A~40A) ; 4.5kA (B、C50A, 63A, D)	6kA (B、C1A~40A) ; 4.5kA (B、C50A, 63A, D)
Over-voltage Operation Value and Time (Uover)	AC280V ± 12V /0.1s	AC280V ± 12V /0.1s
Under-voltage Operation Value and Time (Uover)	AC170V ± 7V /1s	AC170V ± 7V /1s
Rated Working Frequency (Hz)	50/60	50/60
Mechanical and Electric Life	20000次	20000次
Connection and Wiring Capacity	<ul style="list-style-type: none"> <li>◆ Tunnel Connecting Terminal</li> <li>◆ Terminal Connecting Area: 1~16 mm<sup>2</sup> cable is applicable</li> <li>◆ Connecting Screw is M4, Torque is 2.0N.m</li> </ul>	<ul style="list-style-type: none"> <li>◆ Tunnel Connecting Terminal</li> <li>◆ Terminal Connecting Area: 1~16 mm<sup>2</sup> cable is applicable</li> <li>◆ Connecting Screw is M4, Torque is 2.0N.m</li> </ul>

## ● Temperature Correction Factor Sheet (1)

Ambient Temperature (°C) Correction Current (A) Rated Current (A)	-35	-30	-25	-20	-15	-10	-5	-0	5	10	15
1	1.27	1.25	1.23	1.21	1.19	1.17	1.15	1.13	1.10	1.08	1.06
3	3.89	3.83	3.76	3.70	3.64	3.57	3.50	3.44	3.37	3.30	3.22
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
40	51.63	50.86	50.04	40.21	48.37	47.51	46.63	45.74	44.83	43.90	42.95
50	64.92	63.97	62.92	61.86	60.77	59.67	58.54	57.40	56.23	55.05	53.81
63	83.48	82.06	80.64	79.19	77.72	76.22	74.70	73.14	71.54	69.91	68.24

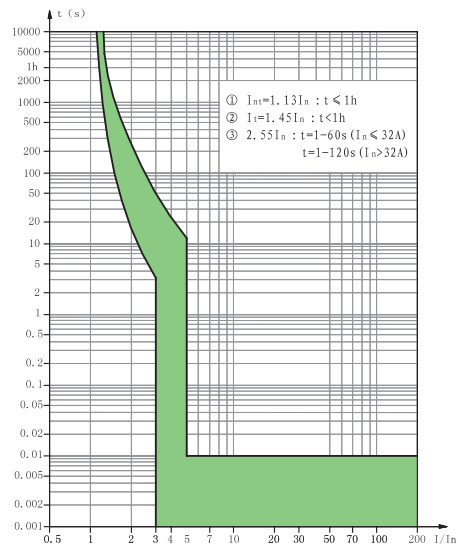
Ambient Temperature (°C) Correction Current (A) Rated Current (A)	20	25	30	35	40	45	50	55	60	65	70
1	1.05	1.02	1.00	0.97	0.94	0.91	0.89	0.86	0.83	0.80	0.77
3	3.14	3.06	3.00	2.92	2.84	2.76	2.67	2.58	2.49	2.38	2.27
6	6.27	6.14	6.00	5.84	5.68	5.52	5.36	5.19	5.01	4.83	4.64
10	10.67	10.34	10.00	9.63	9.24	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
40	41.98	40.99	40.00	38.93	37.85	36.75	35.61	34.43	33.21	31.95	30.63
50	52.56	51.28	50.00	47.82	46.24	44.81	43.33	41.81	40.23	38.58	35.77
63	66.53	64.78	63.00	60.11	58.19	56.21	54.16	52.03	49.81	47.50	43.05



## 4.3 Tripping Curve

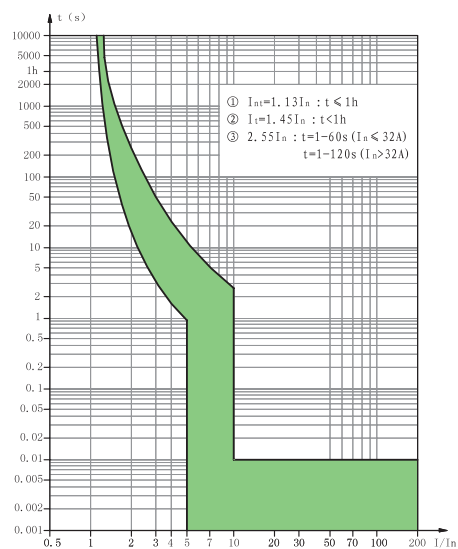
### ● B Curve

- ★ Protect non-inductive and micro inductive circuits
- ★ Rated Current: 1A-63A
- ★ Tripping Characteristics: Instantaneous tripping range:  $3I_n$ - $5I_n$



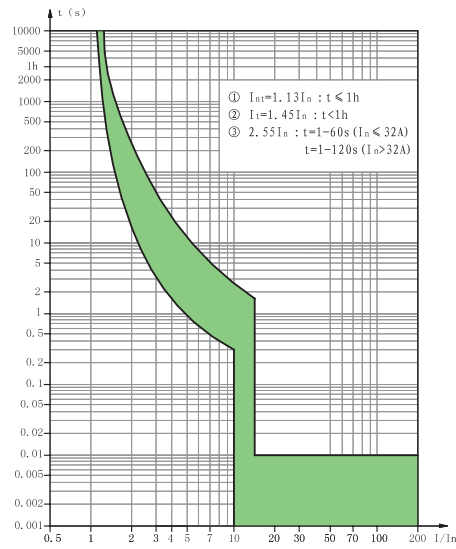
### ● C Curve

- ★ Protect Nominal Load and Distribution Cables
- ★ Rated Current: 1A-63A
- ★ Tripping Characteristics: Instantaneous tripping range:  $5I_n$ - $10I_n$



## ● D Curve

- ★ Protect industrial distribution systems
- ★ Rated Current: 1A-63A
- ★ Tripping Characteristics: Instantaneous tripping range:  $10I_n$ - $14I_n$



## Alarm Contact SD

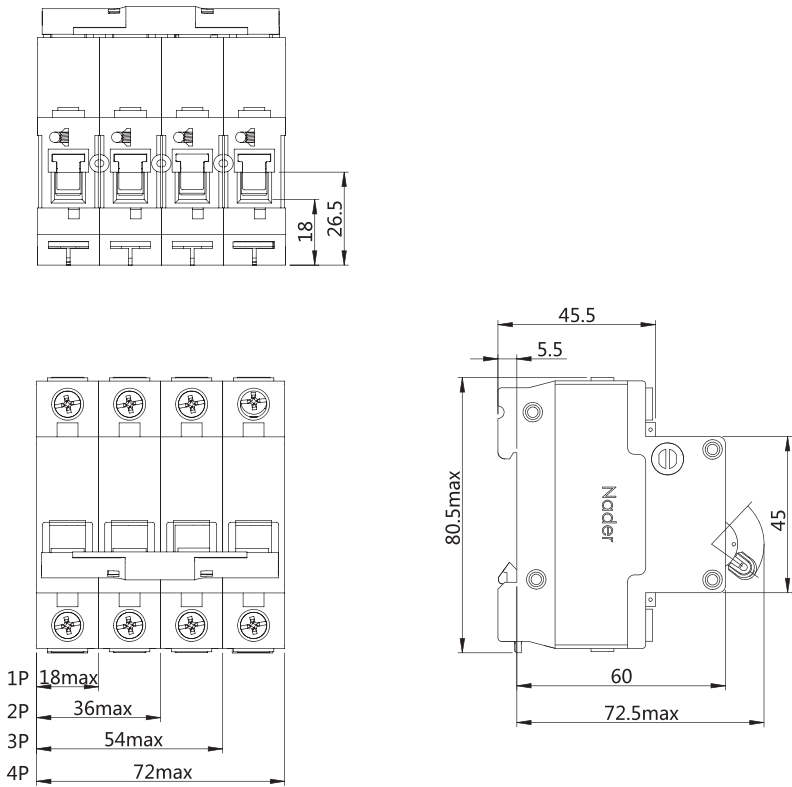


Auxiliary Contact OFF

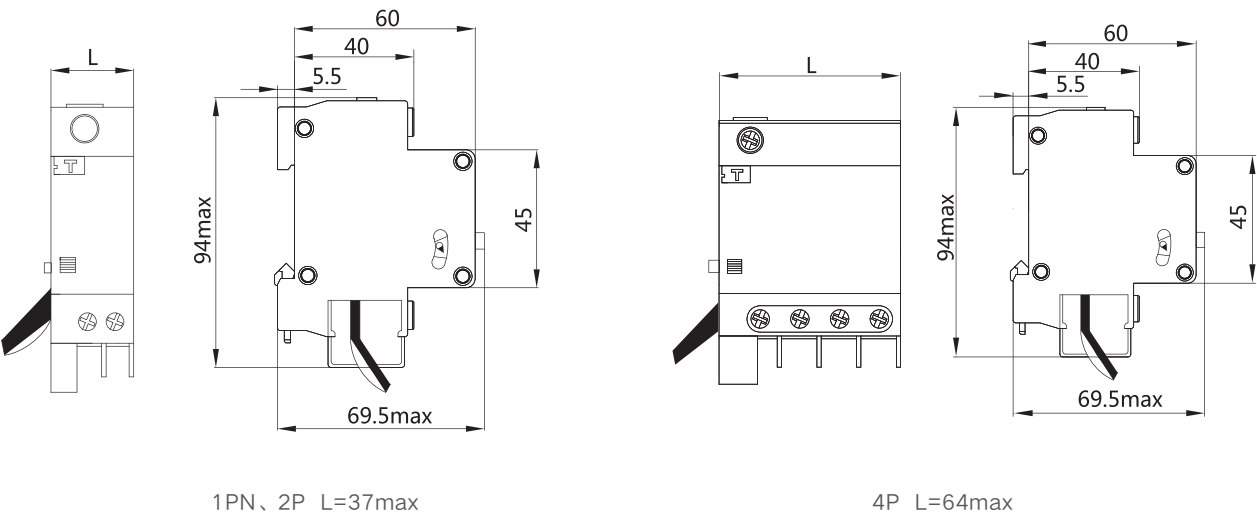


No.	Name	Accessory Code	Function and Matched Quantity
1	Auxiliary Contact	OF	Linked to the left side of MCB to indicate OPEN or CLOSE status of the associated breaker. Matched quantity :Max 3 Pcs
2	Alarm Contact	SD	Linked to the left side of MCB to indicate the accidental tripping status of the associated breaker. Matched quantity:3 Pcs Max.

6. Outline and Mounting Dimension



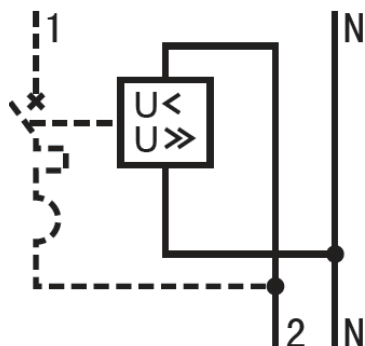
Subject Dimension of MCB



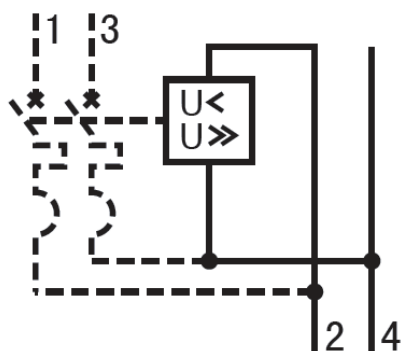
Over-Voltage and Under-Voltage Release Dimension

## 7. Wiring Diagram

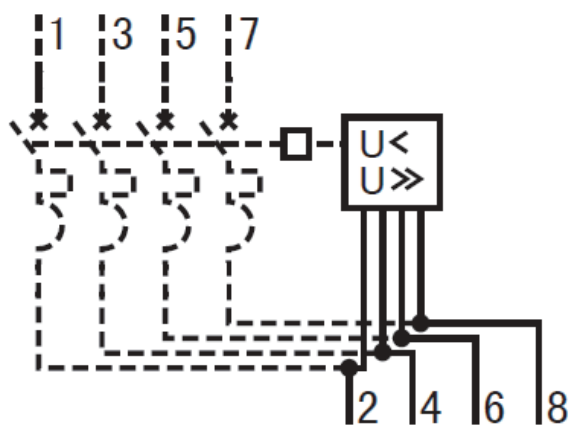
### ● 1PN Wiring Diagram



### ● 2P Wiring Diagram



### ● 4P Wiring Diagram



## 8. Ordering Types and Specifications (Tick ✓ in ☐)

Customer		Ordering Quantity:	Ordering Date:
Frame Rating	<input type="checkbox"/> NDM1GQ-50	<input type="checkbox"/> NDM1GQ-63	
Number of Poles	<input type="checkbox"/> 4P	<input type="checkbox"/> 1PN <input type="checkbox"/> 2P	
Rated Working Voltage(V)	<input type="checkbox"/> AC380/400/415	<input type="checkbox"/> AC230/240	
Rated Working Current(A)	1、2、3、4、5、6、10、16、20、25、32、40、50	1、2、3、4、5、6、10、16、20、25、32、40、50、63	
Instantaneous Tripping Characteristics	<input type="checkbox"/> B: Instantaneous tripping range: 3In-5In, protect non-inductive and micro inductive circuits <input type="checkbox"/> C: Instantaneous tripping range: 5In-10In, protect Nominal Load and Distribution Cables <input type="checkbox"/> D: Instantaneous tripping range: 10In-14In, protect industrial distribution systems		
Over-Voltage and Under-Voltage Functional Code	<input type="checkbox"/> GQ: Indicates over-voltage and under-voltage protective function <input type="checkbox"/> G: Indicates over-voltage protective function <input type="checkbox"/> Q: Indicates under-voltage protective function		
Tie Breaker	<input type="checkbox"/> NDM1-63 <input type="checkbox"/> NDB1C-63		





## OF、SD、MX+OF、NGQ1A Accessory

2016 Edition

**Nader**



## 1. Product Overview

				
Item	OF Auxiliary Contact	SD Alarm Contact	MX+OF Shunt Release	NGQ1A Over-voltage and Under-voltage Accessory
Material Code	30000336	30000347	30000364	30000986
Adapta- tion	NDM1-63、125 NDM1A-63、125 NDM1T-63 NDM1L-32、50、100 NDM1F-63	NDM1-63、125 NDM1A-63、125 NDM1T-63 NDM1L-32、50、100 NDM1F-63	NDM1-63、125 NDM1A-63、125 NDM1T-63	NDM1-63、125 NDM1A-63、125 NDM1T-63

## 2. Application Scope

This Series Accessory can be mounted to NDM1 series MCB in circuits with AC50Hz, Rated Voltage below AC230V(include) and below DC125. This series accessory are widely used in the terminal distribution equipment of low-voltage in such fields:Industry, civil building, energy, telecommunication and infrastructure etc.

## 3. Working Condition

### ● Mounting Method

TH35mm standard mounting rail

### ● Mounting Direction

Horizontal Mounting

### ● Environmental Requirement

Comply with RoHS

## 4. Product Technical Characteristic

### 4.1 OF Auxiliary Contact

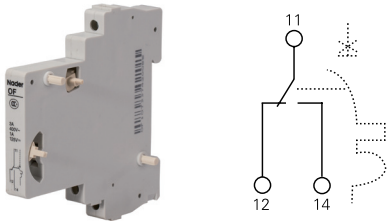
● Application

Linked to the left side of NDM1 to indicate OPEN or CLOSE status of the associated breaker.

● Application

Rated Working Parameters

	Voltage	Current		Voltage	Current
AC	230V	6A	AC	400V	3A
DC	24V	6A	DC	48V	2A
DC	125V	1A	DC	250V	0.4A



Width(mm): 9

Notes: Connected with NDM1 Series Breaker,  
When it is Closing:11,14 means Connecting.  
When it is Opening:11,12 means Connecting.  
Max.Assemble Quantity:2 Pcs OF or 1 Pcs OF+ 1 Pcs SD.

### 4.2 SD Alarm Contact

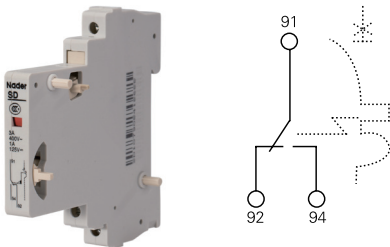
● Application

Linked to the left side of NDM1 to indicate the accidental tripping status of the associated breaker.

● Technical Parameters

Rated Working Parameters

	Voltage	Current		Voltage	Current
AC	230V	6A	AC	400V	3A
DC	24V	6A	DC	48V	2A
DC	125V	1A	DC	250V	0.4A



Width(mm): 9

Notes: Connected with NDM1 Series Breaker,  
When it is Closing:91,92 means Connecting.  
When it is Opening by accidents:91,94 means Connecting.  
When it is Opening by hands:91,92 means Connecting;91,94means disconnecting.  
Max. Assemble Quantity:2 Pcs SD

● Wiring Capacity

- ★ Single: 2.5mm<sup>2</sup> (cables); Double: 1.5mm<sup>2</sup> (cables)
- ★ Accessory of NDM1 Series MCB can be offered separately, used with other company's MCB is not recommended.

### 4.3 MX+OF Shunt Release

## Application

Linked to the left side of NDM1 to indicate the accidental tripping status of the associated breaker.


## ● Technical Parameters

Controlled Voltage: AC 230V/400V    DC 24V/48V

Width(mm): 18

Note: The conversion contact should be active contact and the former can't be passive contact to connect the other ELV module.

former can't be passive contact to connect the other ELV module.



Note: When the voltage of control power circuit is DC24v, we recommend you to take the shunt control loop design as above.  
ZJ: Represent the middle relay(the contact capacity should be 1A)

ZJ: Represent the middle relay(the contact capacity should be 1A)

- Wiring Capacity

- ★ Single: 2.5mm<sup>2</sup> (cables); Double: 1.5mm<sup>2</sup>(cables)
- ★ This accessory can be offered separately, used with other company's MCB is not recommended.

#### 4.4 NGQ1A Over-voltage and Under-voltage Release

- Application

Linked to the right side of NDM1-63 to realize the protection function of single-phase over-voltage, under-voltage, over-voltage and under-voltage.

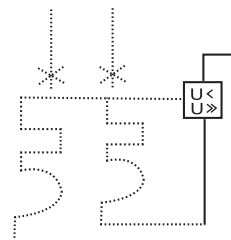
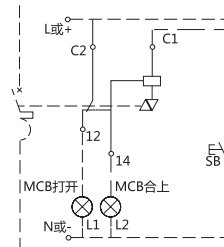
## ● Technical Parameters

- ★ Rated Over-voltage operation value (Uover) : AC280V  $\pm$  5% ,  
Max. Breaking Time: 0.2S
- ★ Rated Under-voltage operation value (Uunder) : AC170V  $\pm$  7% ,  
Max. Breaking Time: 1S
- ★ Width(mm): 18

Note: User can select over-voltage release or under-voltage release depend on their need.

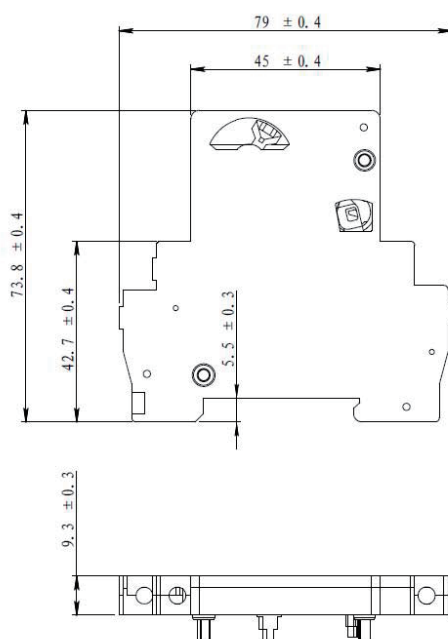
Every circuit breaker only matched with 1Pcs over-voltage release to realize the single path protection.

Every circuit breaker only matched with 1Pcs over-voltage release to realize the single path protection.

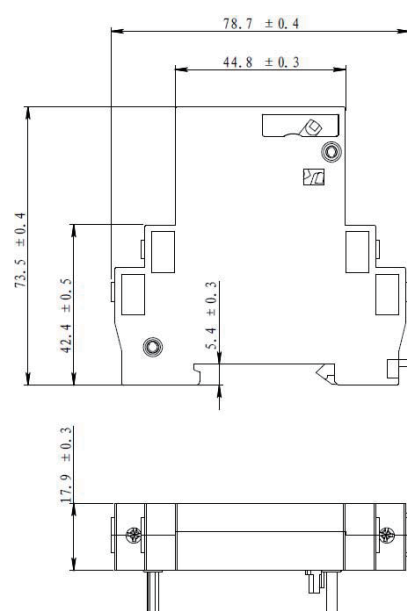


## 5. Outline and Mounting Dimension (mm)

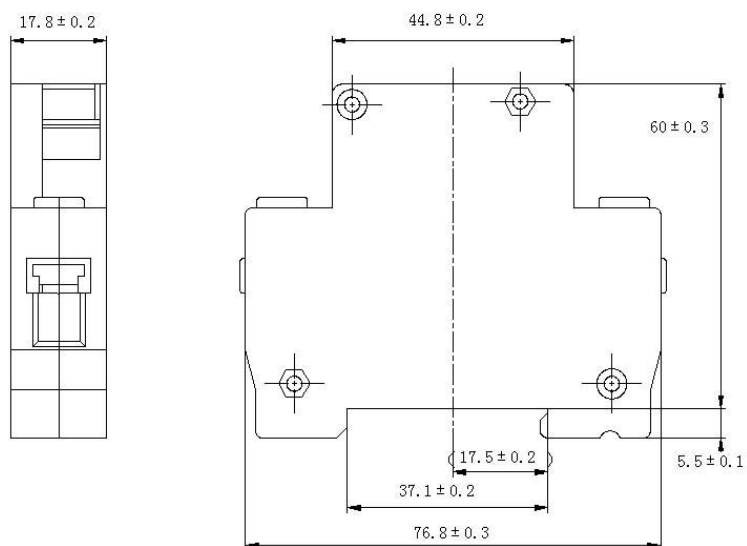
### 5.1 OF、SD External Dimension



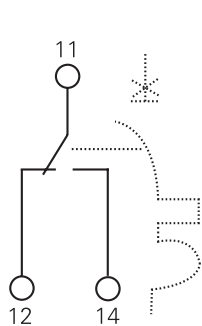
### 5.2 MX+OF External Dimension



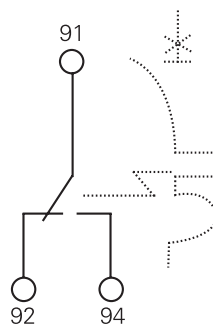
## 5.3 NGQ1A External Dimension



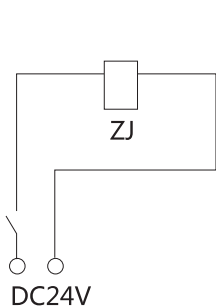
## 6. Wiring Diagram



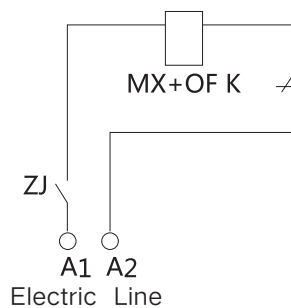
OF



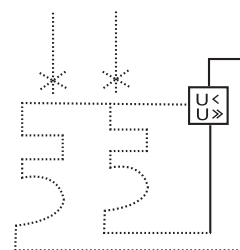
SD



MX+OF



MX+OF



NGQ1A

## 7. Ordering Types and Specifications (Tick ✓ in ☐)

Customer		Ordering Quantity:	Ordering Date:
Frame Rating	<input type="checkbox"/> OF <input type="checkbox"/> SD <input type="checkbox"/> MX+OF <input type="checkbox"/> NGQ1A		
Voltage AC/DC	<input type="checkbox"/> OF 01 <input type="checkbox"/> SD 02 <input type="checkbox"/> MX+ OF 03 ( AC200V ) <input type="checkbox"/> MX+OF 04 ( AC230/400V ) <input type="checkbox"/> MX+OF 05 ( DC24V ) <input type="checkbox"/> MX+OF 06 ( DC48 ) <input type="checkbox"/> NGQ1A 07		
Mounting Method	<input type="checkbox"/> Rail		