



NDM1 Series Miniature Circuit Breaker

2019 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.

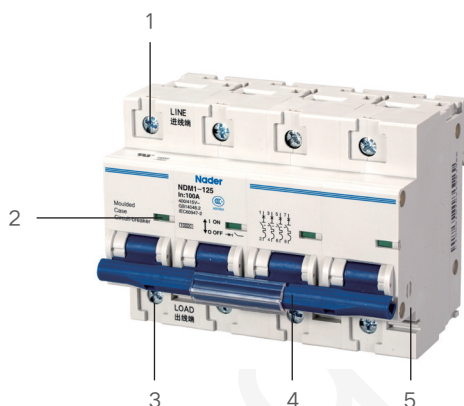
● Structure Features

- ◆ 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

No.	Implication	Instruction		
1	Brand Code	ND: Nader		
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"> ◆ Tunnel Connecting Terminal ◆ Terminal Connecting Area : 1-25 mm² cable is applicable ◆ Connecting Screw is M5, Torque is 2.0N.m 	<ul style="list-style-type: none"> ◆ Tunnel Connecting Terminal ◆ Terminal Connecting Area : 10-50mm² cable is applicable ◆ Connecting Screw is M7, Torque is 3.5N.m 	<ul style="list-style-type: none"> ◆ Tunnel Connecting Terminal ◆ Terminal Connecting Area : 1-25 mm² cable is applicable ◆ Connecting Screw is M5, Torque is 2.0N.m

● 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

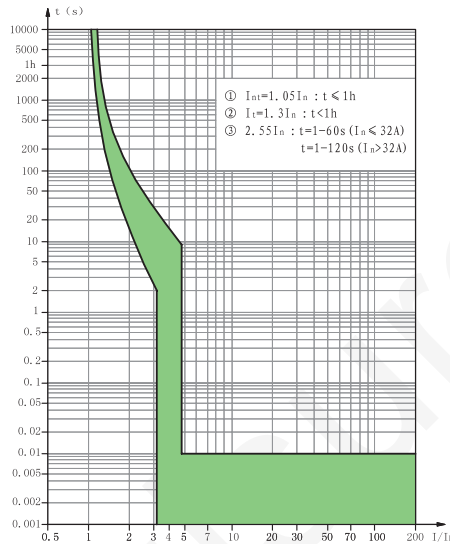
Ambient Temperature (°C) Correction Current (A) Rated Current (A)	20	25	30	35	40	45	50	55	60	65	70
1	1.05	1.02	1.00	0.97	0.94	0.91	0.89	0.86	0.83	0.80	0.77
3	3.14	3.06	3.00	2.92	2.84	2.76	2.67	2.58	2.49	2.38	2.27
6	6.27	6.14	6.00	5.84	5.68	5.52	5.36	5.19	5.01	4.83	4.64
10	10.67	10.34	10.00	9.63	9.24	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

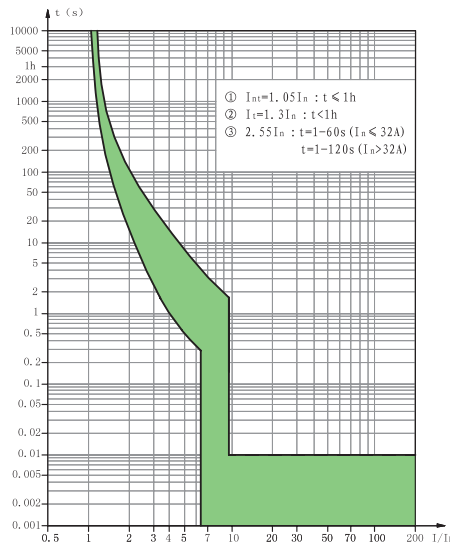
● B Curve

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



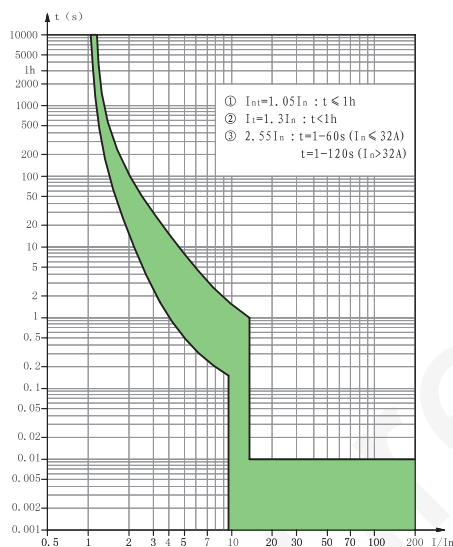
● C Curve

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



● D Curve

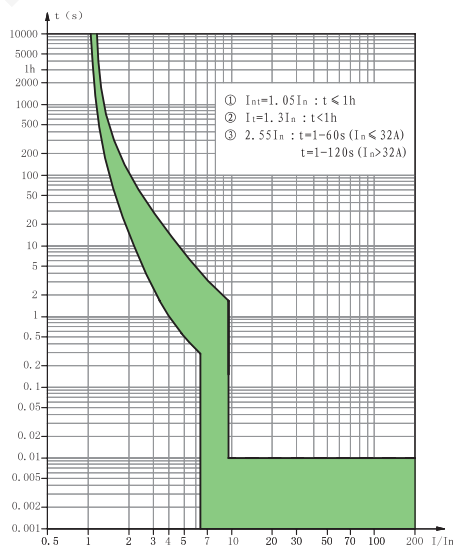
- ★ Protect industrial distribution systems
- ★ Rated Current: 1A~63A
- ★ Tripping characteristics: Instantaneous tripping range is $10I_n \sim 14I_n$



4.3.2 NDM1-125 Tripping Curve

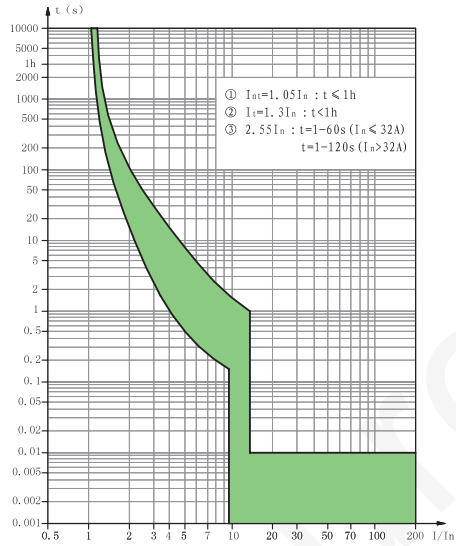
● C Curve

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



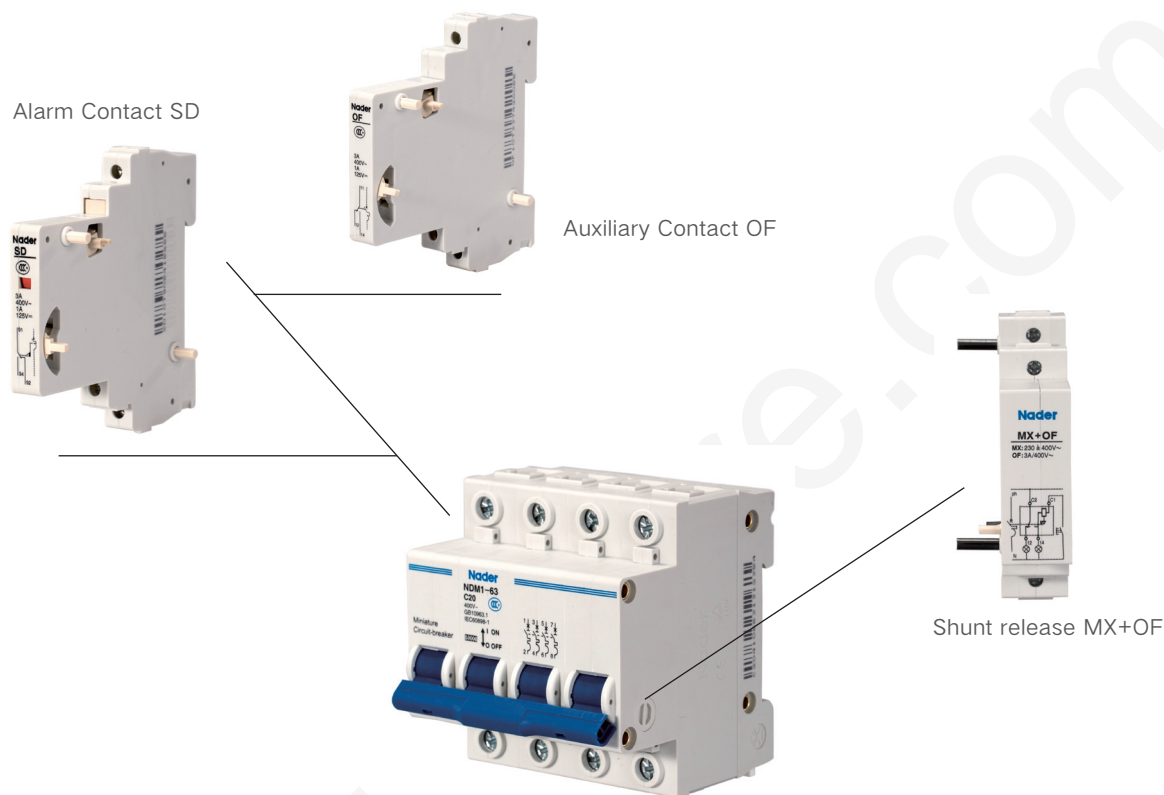
● D Curve

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



5. Accessory

- NDM1Series accessory assembly methods



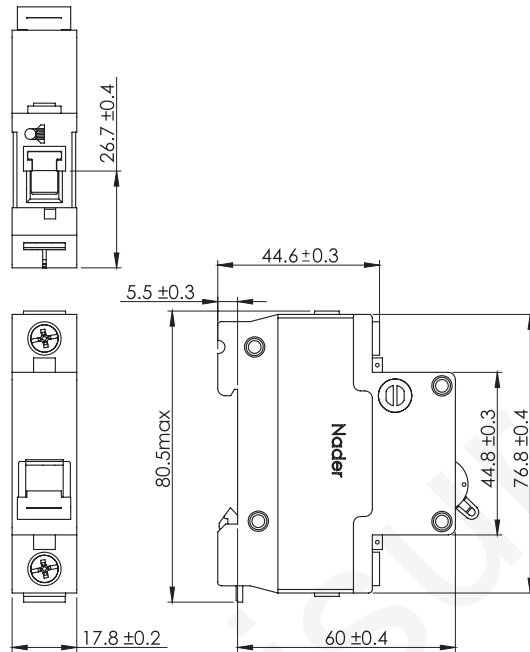
- NDM1-63、NDM1T-63、NDM1-125 Accessory Types

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

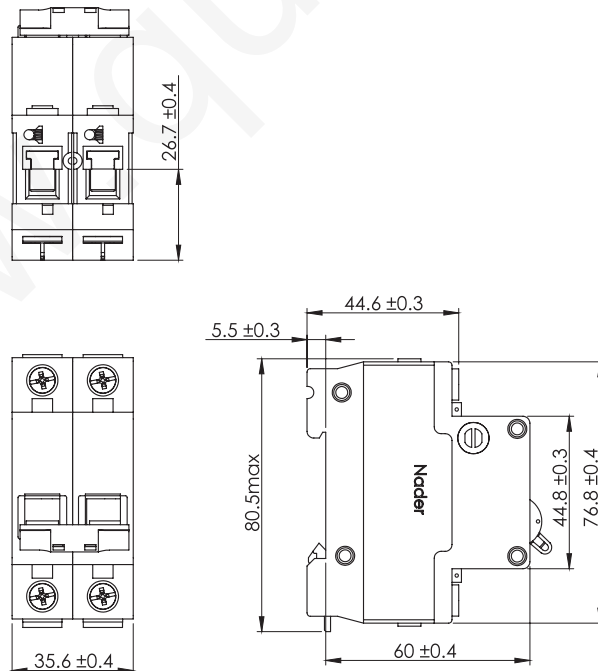
Note: Accessory parameters, please refer to "OF, SD, MX+OF" specimens.

6. Outline and Mounting Dimension

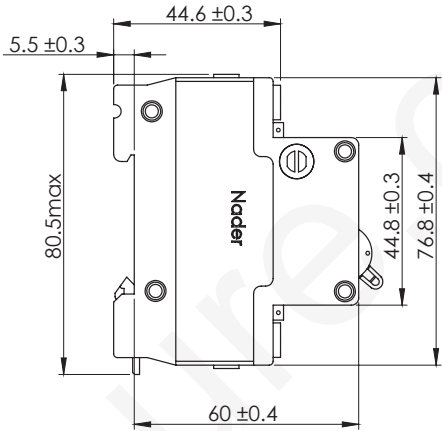
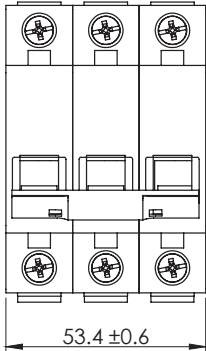
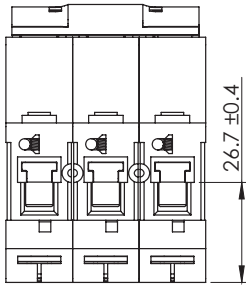
6.1 NDM1-63 , NDM1T-63 Rail Mounting Dimension



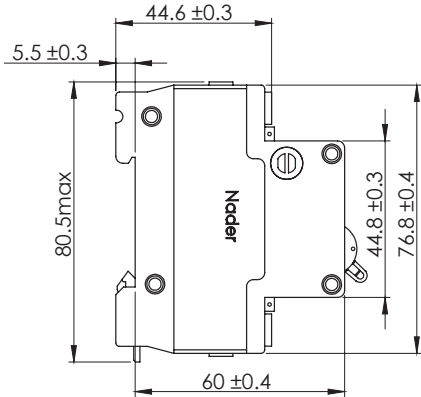
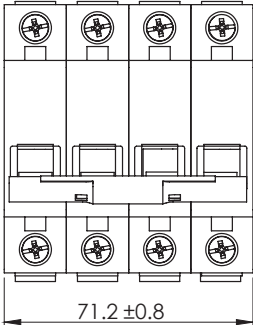
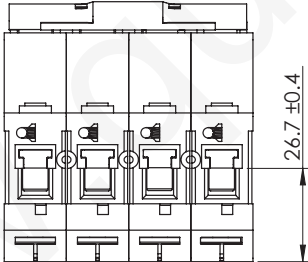
1P



2P

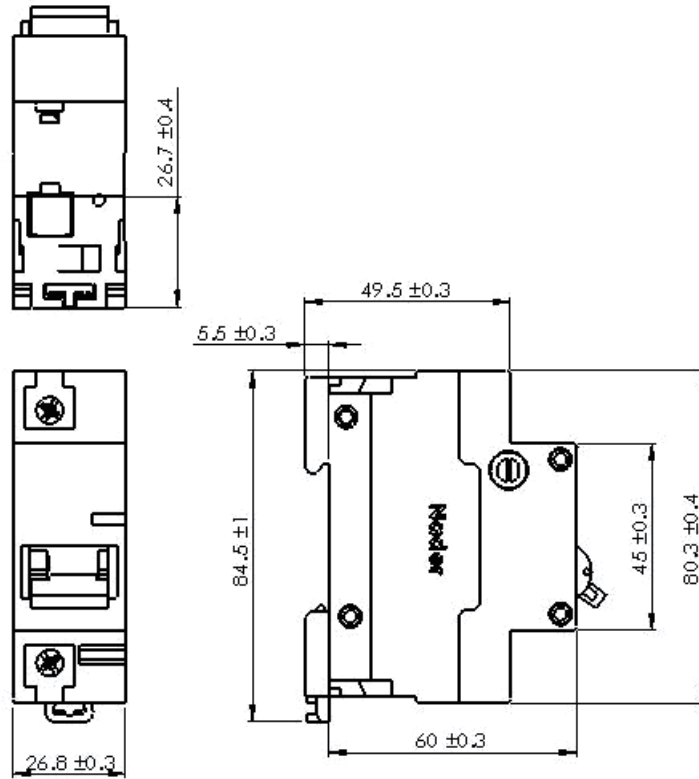


3P

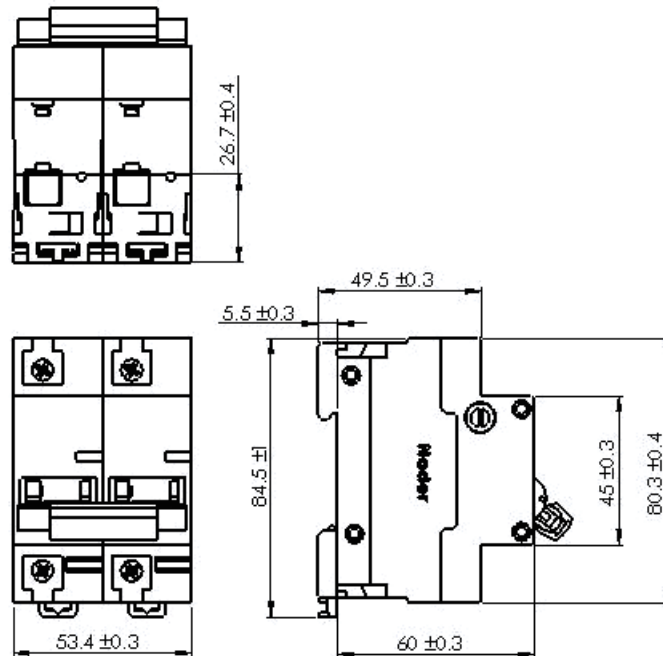


4P

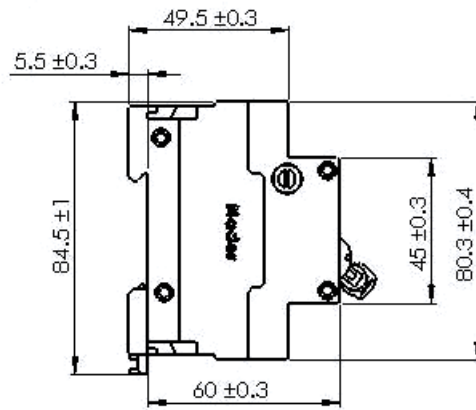
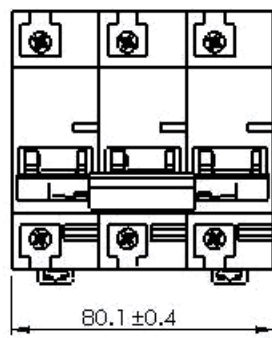
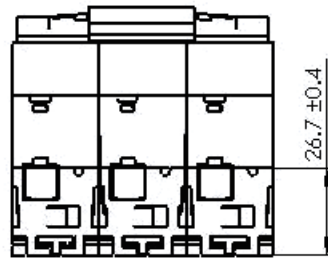
6.2 NDM1-125 Rail Mounting Dimension



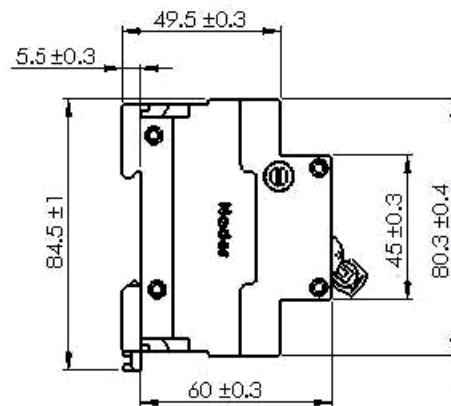
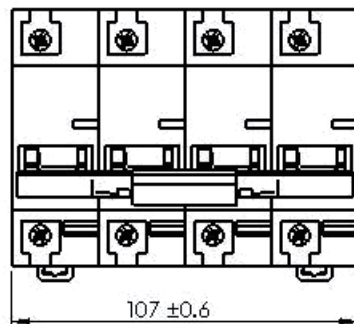
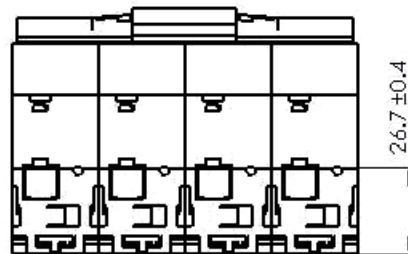
1P



2P



3P



4P

7. Wiring Diagram

NDM1-63, NDM1T-63, NDM1-125

