



# NDM1F Series MCB

2019 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.

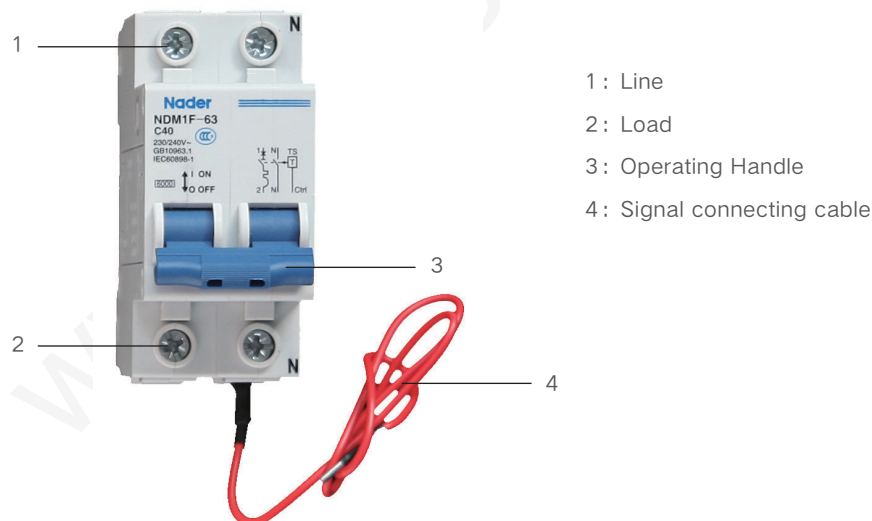
At present, circuit breaker is widely applied to control circuit's breaking together with the electric meters which do prepayment by IC card.

### ● 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

| 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 )<br>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 )<br>4.5kA ( 50A、63A )  |
| Rated Operating Short-Circuit Breaking Current      | 6kA ( 6A~40A )<br>4.5kA ( 50A、63A )  |
| Rated Working Frequency (Hz)                        | 50/60  |
| Reset Time  | ≤30s   |
| Delayed Working Time<br>(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> |

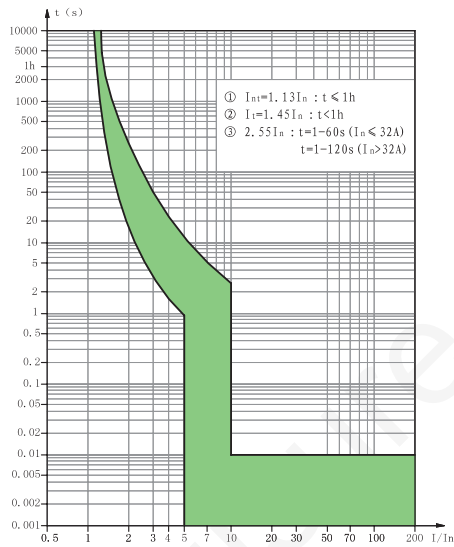
● Temperature Correction Factor Sheet (1)

| Ambient Temperature (°C)<br>Correction Current (A)<br>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)<br>Correction Current (A)<br>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

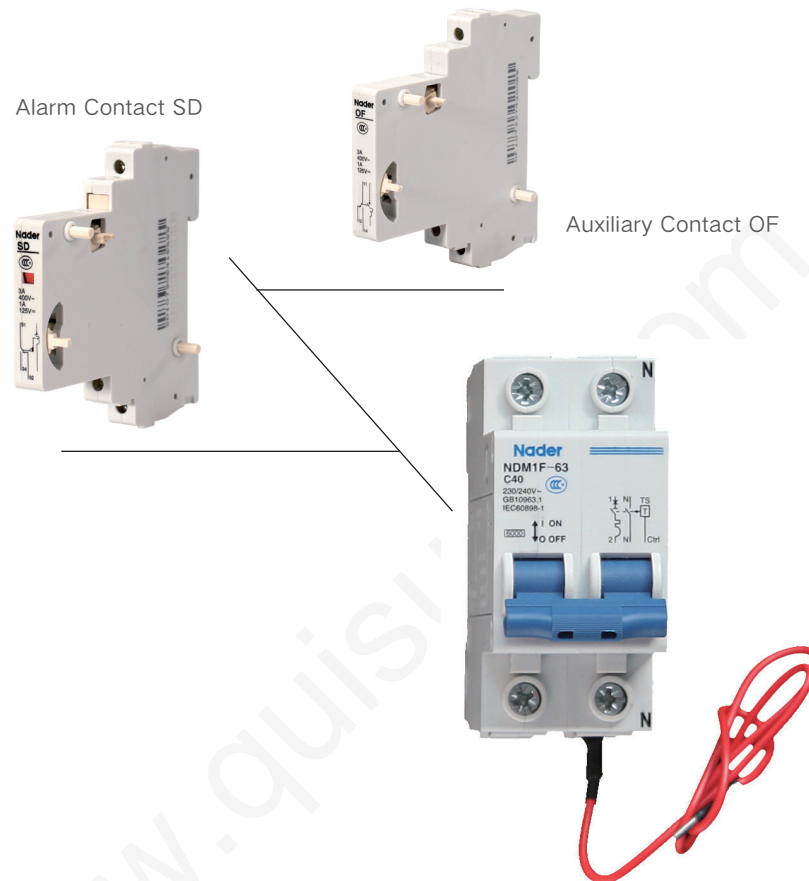
- C Curve
  - ★ Protect Lighting Distribution Circuits
  - ★ Rated Current: 6A~63A
  - ★ Tripping Characteristics: Instantaneous Tripping Range  $5I_n \sim 10I_n$





## 5. Accessory

### 5.1 Accessory Sheet

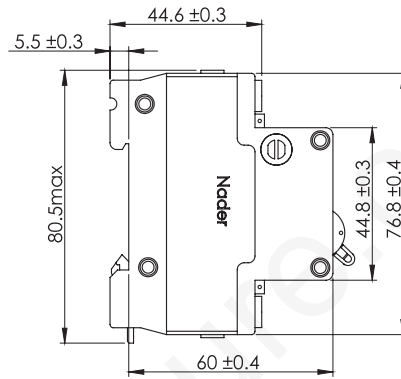
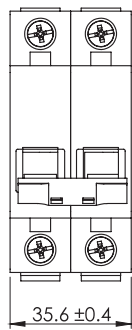
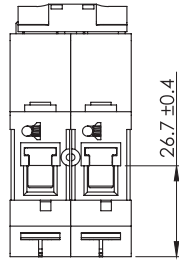


### 5.2 NDM1F-63 Accessory Types

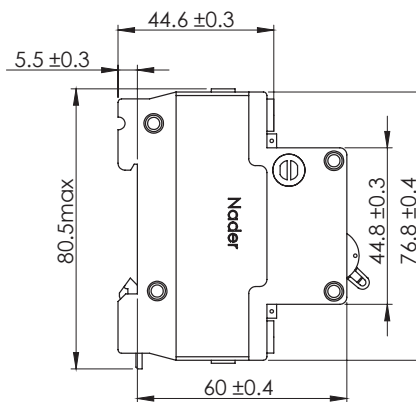
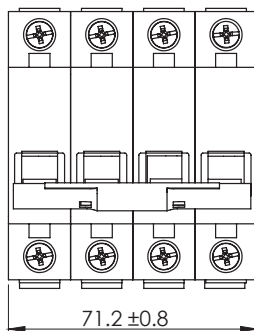
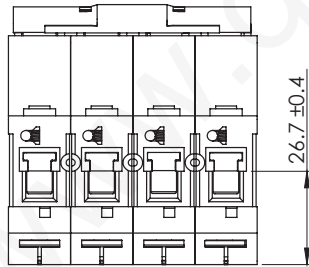
| No. | Name              | Accessory Code | Function and Matched Quantity   |
|-----|-------------------|----------------|---|
| 1   | Auxiliary Contact | OF             | Linked to the left side of MCB to indicate OPEN or CLOSE status of the associated breaker. Matched quantity: 3 Pcs Max.        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

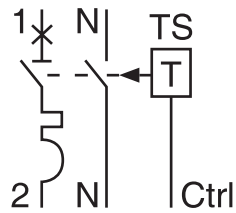


1PN

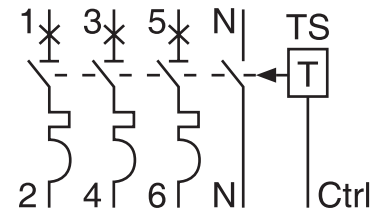


3PN

## 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             |                |