## 9. Accessories characteristics and installation

NM8N moulded case circuit breaker has various accessory modules, which can be found in P84 for more details

### 9.1 AX Auxiliary contact

#### 9.1.1 Function

Remotely indicate the circuit breaker's making (on) or breaking / tripping (OFF) status, connected to the auxiliary circuit of the circuit breaker.

#### 9.1.2 Model description

AX 21-M8

- Serial code: NM8N series
- Frame size code: Auxiliary contacts are universal accessories for each frame, with default as code 21
- Auxiliary contact name code

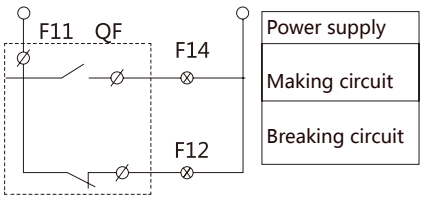
#### 9.1.3 Indication of circuit breaker status

| | |
|---|---|
| Circuit breaker is at breaking status | F12, F14, F11 |
| Circuit breaker is at making status | F12, F14, F11 |

#### 9.1.4 Electrical characteristics

| Rated voltage (V) | Rated current (A) | |
|---|---|---|
| | AC-15 | DC-13 |
| AC 110 | 5 | — |
| AC 240 | 4 | — |
| AC 415 | 2 | — |
| DC 110 | — | 0.25 |
| DC 220 | — | 0.25 |

#### 9.1.5 Wiring diagram



## 9.2 AL Alarm contact

### 9.2.1 Function

It is mainly used to provide a signal when the load of the circuit breaker is overloaded, short-circuited or undervoltage, or tripped.

The reasons for the failure of the alarm signal are:

- Over-load or short-circuit
- Undervoltage trip
- Residual current action trip
- Manual free trip

### 9.2.2 Model description

AL 21-M8

- Serial code: NM8N series
- Frame size code: Alarm contacts are universal accessories for each frame, with default as code 21
- Alarm contact name code

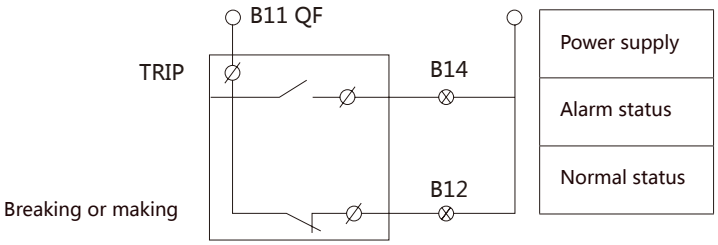
### 9.2.3 Indication of circuit breaker status

| | |
|---|---|
| Circuit breaker is at breaking or making status | B12, B14, B11 |
| Circuit breaker is at free tripping status | B12, B14, B11 |

### 9.2.4 Electrical characteristics

| | | |
|---|---|---|
| | AC-15 | DC-13 |
| AC 110 | 5 | — |
| AC 240 | 4 | — |
| AC 415 | 2 | — |
| DC 110 | — | 0.25 |
| DC 220 | — | 0.25 |

### 9.2.5 Wiring diagram



## 9.3 SHT Shunt release

### 9.3.1 Function

Shunt releases operate according to electrical signals, enabling remote control and automatic control of circuit breakers. When the supply voltage When the voltage is equal to any voltage between 70% and 110% of the rated control power supply voltage, the shunt release should enable the circuit breaker to operate reliably.

### 9.3.2 Model description

SHT 21-M8 AC48V

- AC48V: Rated voltage : AC48V/110V/220-240V/380-415V; DC24V/48V/110-120V/220V
- M8: Series code: NM8N series
- 21: Frame code: 21 for 125 frame; 22 for 250/400/630 frame; 24 for 800 frame; 25 for 1600 frame
- SHT: Shunt release code

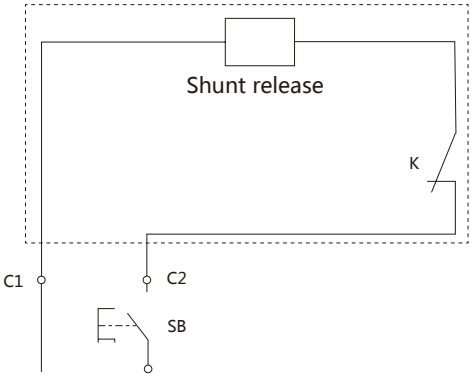
### 9.3.3 Electrical characteristics

| Frame size | Power consumption (W) | | | | | | |
|---|---|---|---|---|---|---|---|
| | AC48V | AC110V | AC220-240V | AC380-415V | DC24V | DC48V | DC220V |
| 125A | 2.2 | 2.2 | 2 | 2.5 | 2.5 | 2.2 | 2 |
| 250/400/630A | 2.3 | 2.5 | 2.2 | 2.5 | 2.2 | 2.5 | 2.5 |
| 800A | 2.3 | 2.5 | 2.2 | 2.5 | 2.2 | 2.5 | 2.5 |
| 1600A | 110 | 195 | 480 | 560 | 230 | 110 | 160 |

### 9.3.4 Action characteristics

Can be powered for a long time. Response time: pulse type ≥ 20ms, ≤ 60ms

### 9.3.5 Wiring diagram




Note：When the rated control power supply voltage DC24V shunt release is used, the maximum length of the copper wire (each of the two wires) must meet the following table:

| Conductor cross-sectional area / Rated control supply voltageUs(DC24V) | 1.5mm² | 2.5mm² |
|---|---|---|
| 100%$U_s$ | 150m | 250m |
| 85%$U_s$ | 100m | 160m |

## 9.4 UVT Under-voltage release

### 9.4.1 Function

Realize the under-voltage protection function of the circuit breaker, open the circuit breaker when the power supply voltage is too low, and protect the electrical equipment.

- When the supply voltage drops (even slowly) to 70% to 35% of the rated control supply voltage, the undervoltage trips The breaker should open the circuit breaker reliably.
- When the supply voltage is equal to or greater than 85% of the rated control supply voltage of the undervoltage release, the circuit breaker should be guaranteed to close.
- When the supply voltage is less than 35% of the rated control supply voltage of the undervoltage release, the undervoltage release should prevent the circuit breaker.

### 9.4.2 Model description

UVT 21-M8 AC48V

- AC48V: Rated voltage: AC48V; AC110V;AC220-240V;AC380-415V; DC24V;DC48V;DC110-120V;DC220V
- M8: Series code: NM8N series
- 21: Frame size code: 21 for 125 frame; 22 for 250/400/630 frame; 24 for 800 frame; 25 for 1600 frame
- UVT: Under-voltage release code

### 9.4.3 Electrical characteristics

| Frame size | Power consumption (W) | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | AC48V | AC110V | AC220-240V | AC380-415V | DC24V | DC48V | DC110-120V | DC220V |
| 125A | 1.6 | 1.6 | 2 | 3 | 1.2 | 1.6 | 2 | 2.2 |
| 250/400/630A | 1.5 | 1.5 | 2.2 | 3 | 0.8 | 1.5 | 2 | 2.5 |
| 800A | 1.5 | 1.5 | 2.2 | 3 | 0.8 | 1.5 | 2 | 2.5 |
| 1600A | 2.6 | 2.2 | 1.7 | 0.7 | 2.8 | 2.5 | 2.2 | 1.8 |

### 9.4.4 Wiring diagram