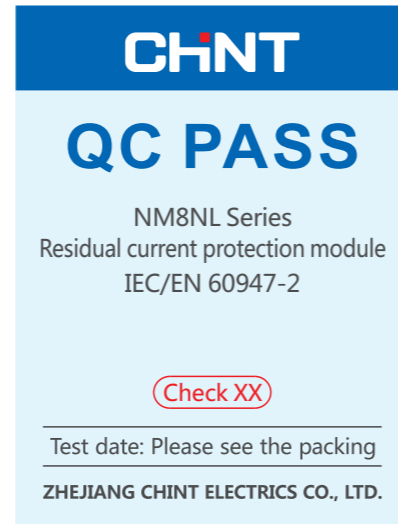


## ⚡ Safety Warning

- 1) Only professional technicians are allowed for installation and maintenance.
- 2) Installation in any damp, condensed-phase environment with inflammable and explosive gas is forbidden.
- 3) When the product is being installed or maintained, the power must be switched off.
- 4) You are prohibited from touching the conductive part when the product is operating.
- 5) This module cannot protect against the electric shock hazard caused by touching both wires of the protected circuit at the same time. Please pay attention when using it.
- 6) Press the test button at least once a month to check whether the module operates normally.
- 7) When the module breaks due to the fault (leakage, overload or short circuit) of the protected circuit, the making operation can only be carried out after the cause is found out and the fault is eliminated.
- 8) During the motion characteristic test of this module, the special test instrument approved by the relevant national department shall be used. The test method of touching the grounding device with the phase wire is strictly prohibited.
- 9) It is the main function of this module to provide indirect contact protection for electric shock with fatal danger. The residual current protection module with rated residual operating current not more than 0.03A can also be used as supplementary protection for direct contact in case of failure of other protection measures, but it cannot be used as the sole protection.



## NM8NL Series Residual current protection module User Instruction

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## NM8NL Series Residual current protection module User Instruction

### 1 Model Specifications and Implications

NM8 N L - 125 3P A RCD1 OTHER  
① ② ③ ④ ⑤ ⑥ ⑦ ⑧

- ① Enterprise feature code, category code, design serial number
- ② Series iteration number
- ③ Residual current protection module code
- ④ Frame current code  
125:125A  
250:250A  
400:400A  
630:630A
- ⑤ Polar number code  
3P: three-pole  
4P: four-pole
- ⑥ Residual current type code  
A: Type A  
Default: Type AC
- ⑦ Rated residual operating current code  
RCD1: 0.03A-0.1A-0.3A-1A  
RCD2: 0.05A-0.2A-0.5A-2A  
RCD3: 0.05A-0.2A-0.5A-1A  
RCD4: 0.1A-0.3A-1A-2A
- ⑧ Code of special requirements  
Number according to corresponding special requirements

### 2 Normal Use, Installation and Transportation, Storage Conditions

#### 2.1 Use conditions

- 1) Ambient temp.: -35°C~+70°C; average value within 24h not exceeding +35°C.
- 2) RH shall not exceed 50% when maximum temperature is +40°C; in case of lower temperature, higher RH is allowed (e.g., 90% for +20°C). Measures should be taken against occasional condensation due to temperature change.
- 3) The altitude of the installation site shall not exceed 2,000m.
- 4) Pollution class: Class 3.
- 5) Installation category: III.

#### 2.2 Installation conditions

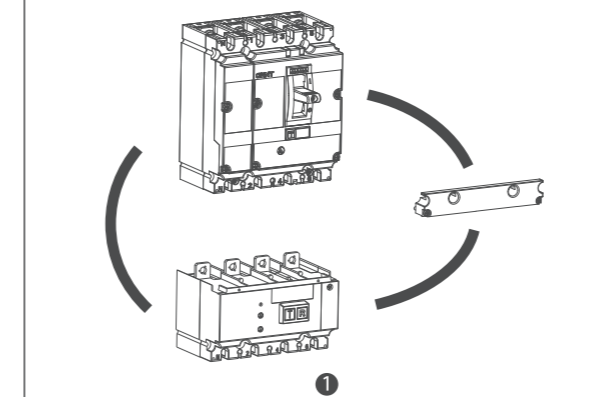
- 1) In accordance with the safety warning conditions, the installation site shall be free of explosion hazard and corrosive gas, and shall be moisture-proof, dust-proof, vibration-resistant and protected against direct sun exposure.
- 2) The installation location should avoid strong current and electromagnetic devices as well as magnetic field interference.
- 3) Before installation, check whether the basic parameters of the product meet the requirements and manually operate it three times. The product should be flexible and reliable, and should be installed after it is confirmed to be intact.

- 4) The connecting conductor should be PVC copper conductor or equivalent copper bar.
- 5) In order to prevent phase-to-phase short circuit, bare copper wires and busbars at the incoming end should be insulated.
- 6) During installation, the neutral line and the protection line must be strictly distinguished. The four -pole neutral line should be connected to the residual current protection circuit breaker, a combination of the residual current protection module and the corresponding molded case circuit breaker. The neutral line passing through the residual current protection circuit breaker must not be used as the protection line, and must not be grounded repeatedly or connected to the exposed conductive part of the equipment. The protection line must not be connected to the residual current protection circuit breaker.
- 7) When the residual current protection circuit breaker breaks, the reset button R should be pressed first and then makes.
- 8) The residual current protection circuit breaker installed separately should be easy to maintain and operate and is generally 1,500mm from the ground.
- 9) Inspection before operation:
  - ① Check whether the wiring is correct;
  - ② Confirm that there is no short circuit or short circuit to ground between terminals or exposed live parts;
  - ③ Make sure that all terminal connections and fixing screws are tightened without loosening.
- 10) Insulation test:  
The insulation test has been carried out for this product according to the standard before delivery. Since this product is equipped with electronic component board, if retest is carried out before installation, the following steps must be followed:
  - ① Use a 500VDC megger;
  - ② When the circuit breaker is in the breaking state, the test shall be carried out respectively between the incoming and outgoing line ends and between the connecting plates of the three incoming line ends (three connecting plates are connected with wires) and the shell (covered with metal foil); when the circuit breaker is in the making state, it is strictly forbidden to test between the phases of the product;
  - ③ The insulation resistance should not be less than 10MΩ.
- 11) The inspection items after installation of this product should be carried out in accordance with Article 6.3.6 of GB / T 13955 "Installation and Operation of Leakage Protectors". The inspection items after installation of this product:
  - ① Operate three times with the test button, the product should motion accurately;
  - ② Power on and off three times, there should be no de-motion.
- 12) After the product is put into operation, the user should make a record of operation and establish the corresponding management system.
- 13) In case of electric shock casualty accident within the scope of this product, the motion of this product should be checked and the reasons for failure to play a protective role should be analyzed. The site should be protected and the product should not be dismantled before investigation.

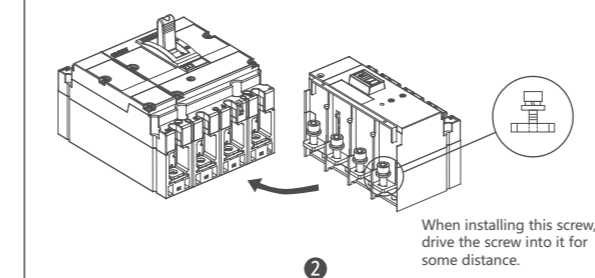
- 2.3 Transportation and storage condition  
The applicable temperature range is from -25 °C to +55 °C, and it can reach +70 °C in a short time (within 24 hours). The storage area should be well ventilated, dry and free from rain, snow and direct sunlight.

### 3 Installation

#### General structure chart

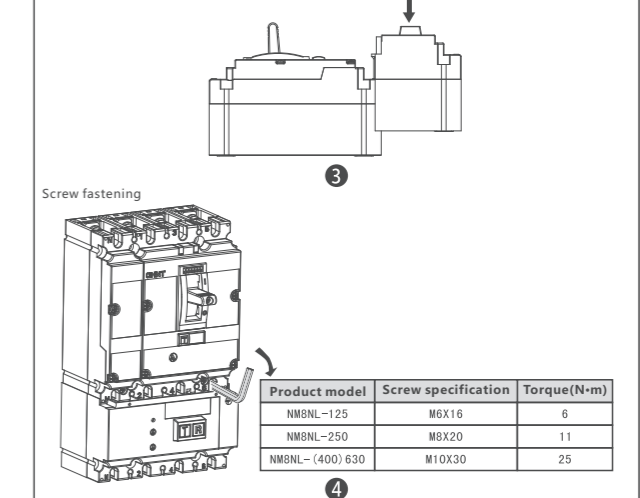


#### Connecting installation



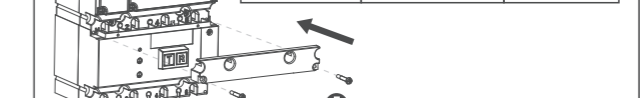
When installing this screw, drive the screw into it for some distance.

#### Staggered installation



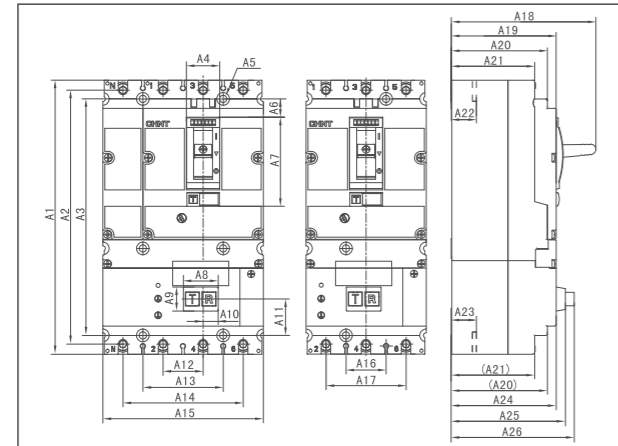
#### Screw fastening

Product model	Screw specification	Torque(N·m)
NM8NL-125	M6X16	6
NM8NL-250	M8X20	11
NM8NL-(400)630	M10X30	25



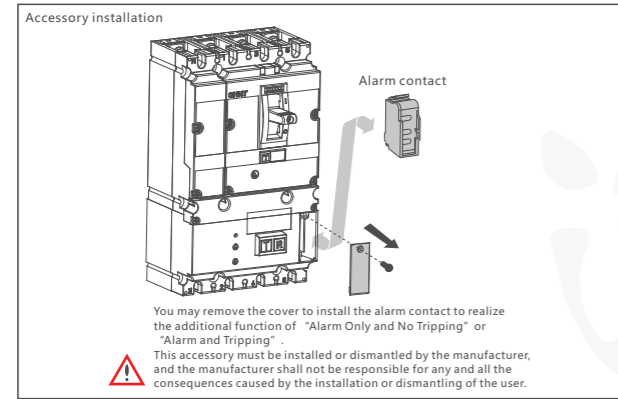
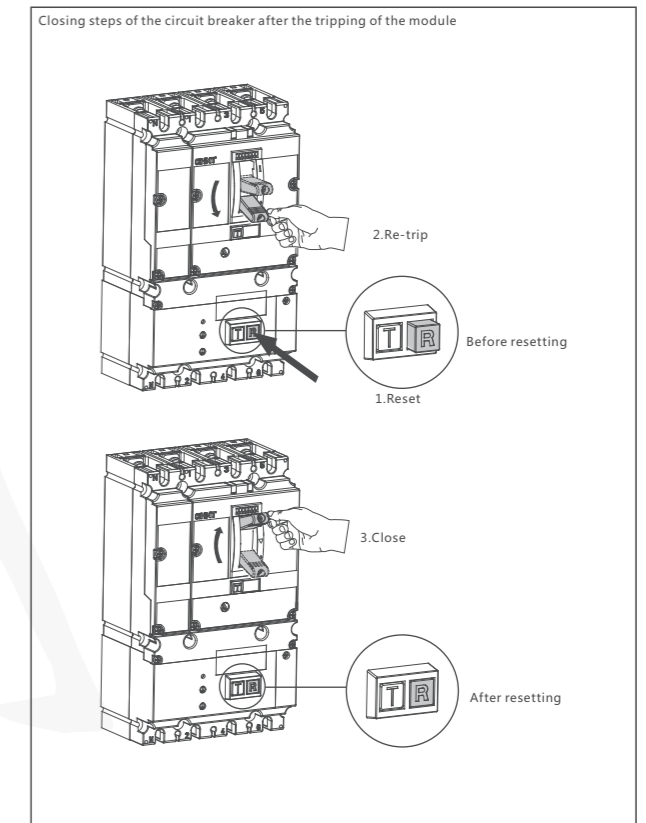
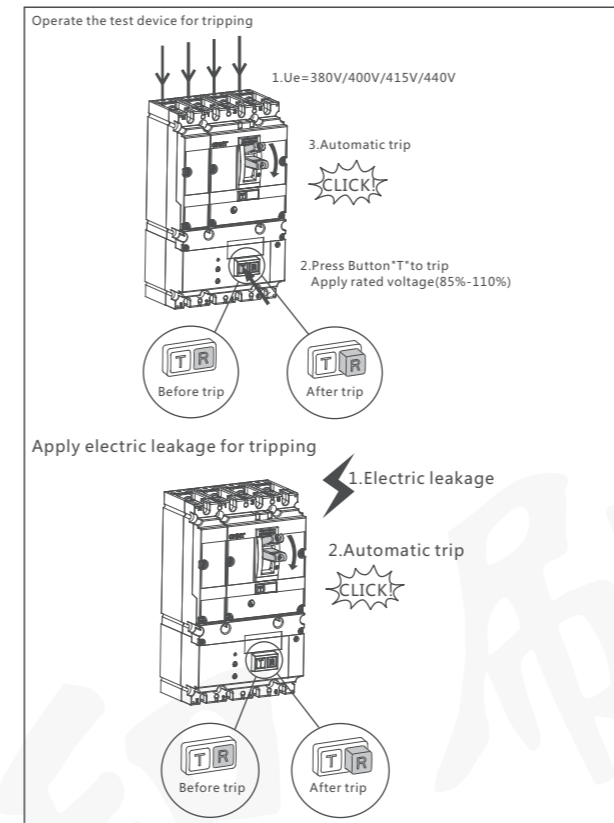
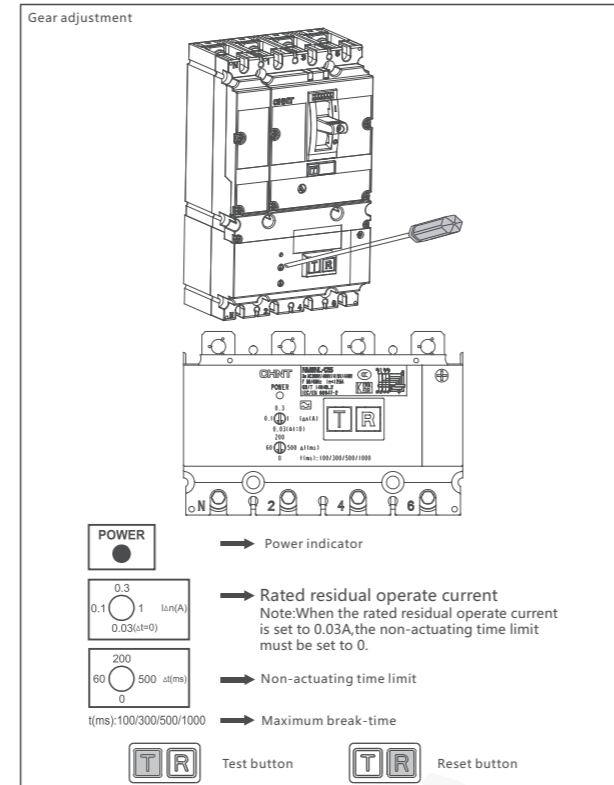
Product model	Screw specification	Torque(N·m)
NM8NL-125	ST2.9X19	1.5
NM8NL-250	ST2.9X19	1.5
NM8NL-(400)630	ST3.5X19	2

4 Outline and Installation Size



	A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	A11	A12	A13
NM8NL-125/3P	205	190	177	25	20/25.5	13.8	66.7	26	18	11.2	27.3	-	-
NM8NL-125/4P	-	-	-	-	40/55.5	-	-	-	-	-	-	30	60
NM8NL-250/3P	232	215	200	27	20/25.5	18.8	75.3	28	18	14	32	-	-
NM8NL-250/4P	-	-	-	-	40/55.5	-	-	-	-	-	-	35	70
NM8NL-(400)630/3P	355	327	301	51.8	40/55.5	27.5	114	45	27	22.5	38.5	-	-
NM8NL-(400)630/4P	-	-	-	-	60/75.5	-	-	-	-	-	-	45	90
	A14	A15	A16	A17	A18	A19	A20	A21	A22	A23	A24	A25	A26
NM8NL-125/3P	-	90	30	60	108.5	78.5	72	62.5	19	19	78.5	85.5	92
NM8NL-125/4P	90	120	-	-	-	-	-	-	-	-	-	-	-
NM8NL-250/3P	-	105	35	70	125	88	82	72.5	22.5	22.5	88	95	101
NM8NL-250/4P	105	140	-	-	-	-	-	-	-	-	-	-	-
NM8NL-(400)630/3P	-	140	45	90	-	-	-	-	-	-	-	-	-
NM8NL-(400)630/4P	135	185	-	-	171	113	108	96	27	27	113	119	125

5 Use and Operation



6 Derating Factor of Circuit Breaker with Residual Current Protection Module

Rated current In(A)	NM8NL-125		NM8NL-250		NM8NL-(400)630		
	Derating Factor Thermal magnetic type(TM)	Derating Factor Thermal magnetic type(TM)	Derating Factor Electronic type(SU)	Derating Factor Thermal magnetic type(TM)	Derating Factor Electronic type(SU)	Derating Factor Electronic type(SU)	
16	1	32	-	1	250	1	1
20	1	63	-	1	315	0.96	-
25	1	100	-	1	350	0.95	-
32	1	125	1	-	400	0.93	1
40	1	160	1	1	500	0.87	-
50	1	180	1	-	630	-	0.95
63	1	200	0.9	-	-	-	-
80	0.95	225	0.9	-	-	-	-
100	0.9	250	0.9	0.95	-	-	-
125	0.8	-	-	-	-	-	-

7 Environmental Protection

In order to protect the environment, the product or product parts should be disposed of according to the industrial waste treatment process, or be sent to the recycling station for assortment, dismantling and recycling.