NO:2024.09

CHINT ELECTRICS

NB8-125R
Moulded Case Circuit Breaker

User manual

Standard: IEC/EN 60947-2

Safety Warning

1. The product must not be installed in environments containing flammable, explosive gases or where there is moisture and condensation. Do not operate or handle the product with wet hands.
2. Do not touch the conductive parts of the product while it is in operation.
3. Ensure the power is turned off before installing, maintaing, or servicing the product.
4. Children must not be allowed to handle the product or play with the packaging.
5. Allow sufficient space and a safe distance around the product when installing.
6. Do not install in environments where gas media can corrode metal or damage insulation.
7. When installing, use the designated wiring and connect to a power supply and load that meet the specific requirement.
8. To avoid accidents, follow the installation and mounting instructions in the manual carefully.
9. After unpacking, inspect the product for any damages and verify all necessary parts are included.

⑩ Prevent foreign objects from entering the product.

⑪ During installation, ensure that wires or comb busbar is securely fastened and tightened to the specificed torque requirement.

⑫ After unpacking, please check the product for any damage and count the integrity of the items.

1 Main purpose and scope of application

The NB8-125R molded case circuit breaker complies with the IEC 60947-2 standard and is designed for low-voltage applications with an operating voltage of up to 400V, 50Hz, and an operating current of up to 100A. It offers protection against overload and short-circuit conditions and is suitable for occasional switching of circuits.

2 Normal use, installation, transportation, and storage conditions

2.1 Normal usage conditions

The ambient air temperature ranges from -25℃ to +60℃, with a 24-hour average not exceeding +35℃.

At a maximum temperature of +40°C, the relative humidity should not exceed 50%. Higher levels are permissable at lower temperatures, such as up to 90% at +20° C. Special precautions should be taken to address occasional condesation due to temperature fluctuation.

The installation site altitude should not exceed 2000 meters.

Pollution level: Level 3

2.2 Installation conditions

The unit should be installed in a location equipped with adequate protection against rain and snow, free from water vapor, impacts and vibrations.

2.3 Transportation and storage conditions

The permissable temperature range for transporation and storage ranges from -25°C to +55°C, with short-term tolerance up to 70°C (for a maximum of 24 hours). The storage area should be well-ventilated, dry and protected from rain, snow and direct sunlight.

3 Main technical parameters and performance

Table 1 Main technical parameters of the product

No.	Technical parameters	Parameter values
1	Rated voltage	1P, 1P+N: 230V; 2P, 3P, 3P+N, 4P: 400V
2	Number of poles	1P, 1P+N, 2P, 3P, 3P+N, 4P
3	IP rating	IP20
4	Rated short-circuit capacity	Icu = 25/20kA, Ics = 20/15kA,
5	Rated insulation voltage (Ui)	690V AC
6	Rated impulse withstand voltage (Uimp)	8kV
7	Mechanical life	20,000
8	Electrical life	6,000
9	Operating frequency	120 times/hour

4 Overall dimensions (mm)

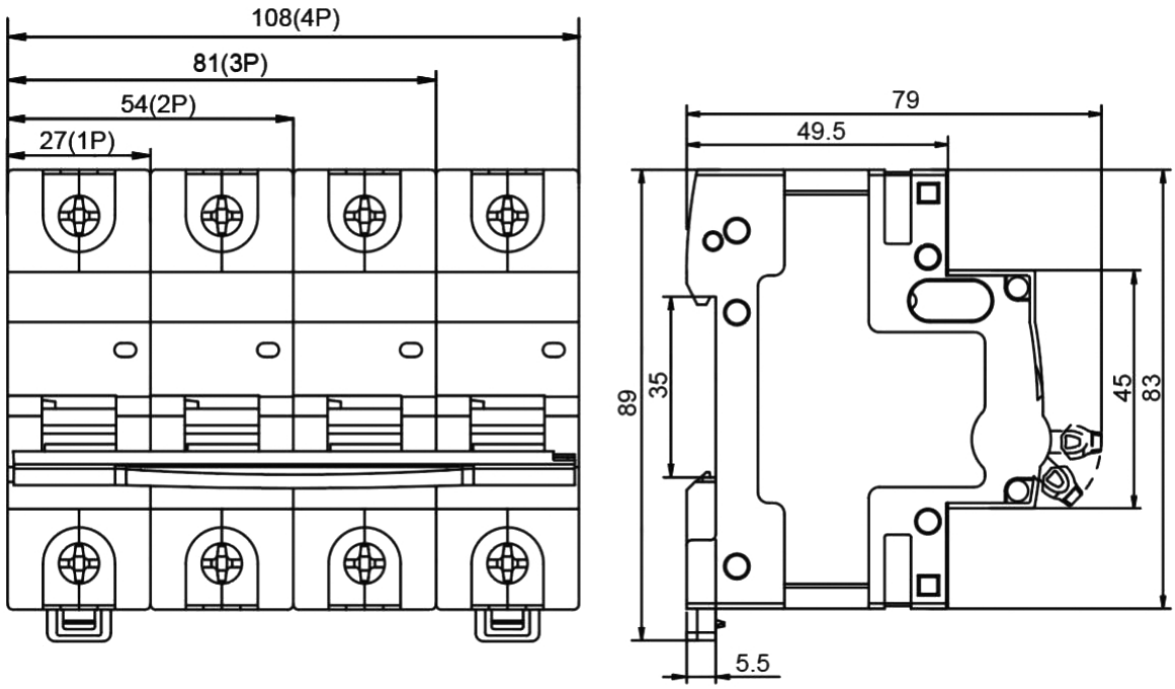


Figure 1 Dimension

5 Installation, commission, and operation

5.1 Before installation and actual operation, verify that the circuit breaker rating and specification matches the required operating conditions. Before powering on, manually operate the circuit breaker several times ensuring the switching mechanism functions properly without any obstruction whatsoever. The closing and opening status of the circuit breaker are indicated in Figure 2 below.

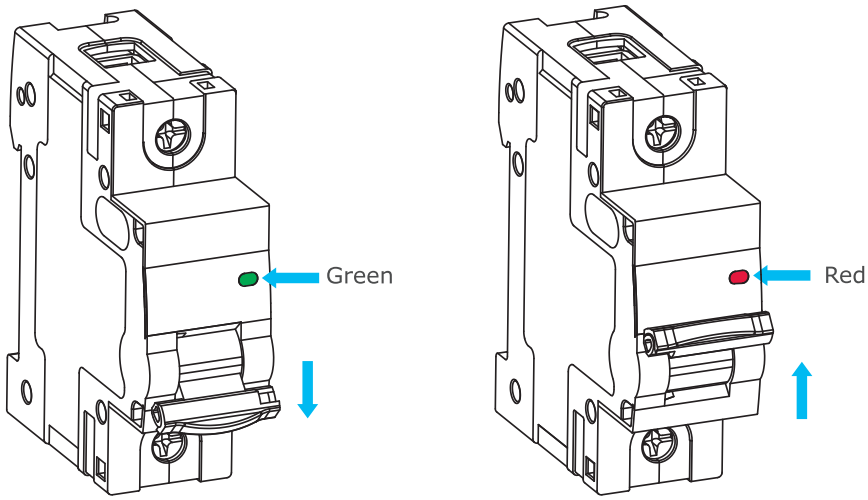


Figure 2 Circuit breaker closing and opening status indicator.

5.2 Installation method

Installation using TH35-7.5 type mounting rail, as shown in Figure 3

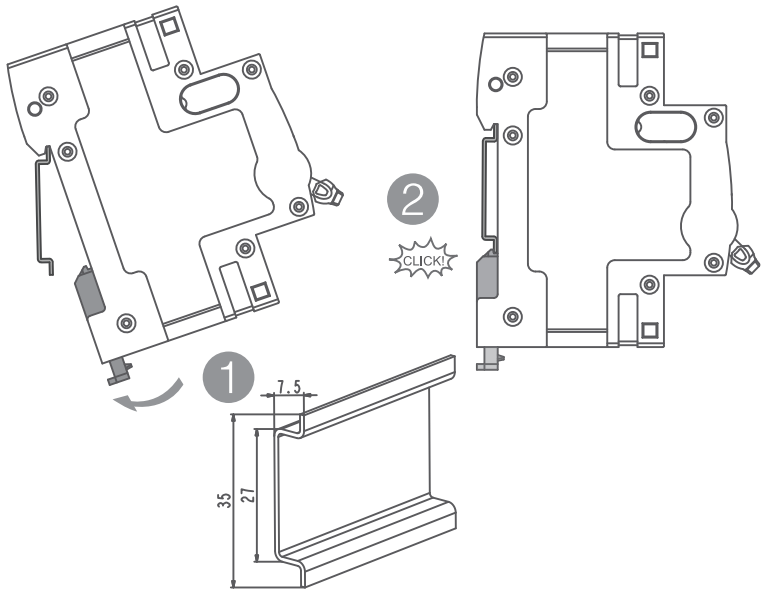


Figure 3 Installation

5.3 Dismantle as shown in Figure 4

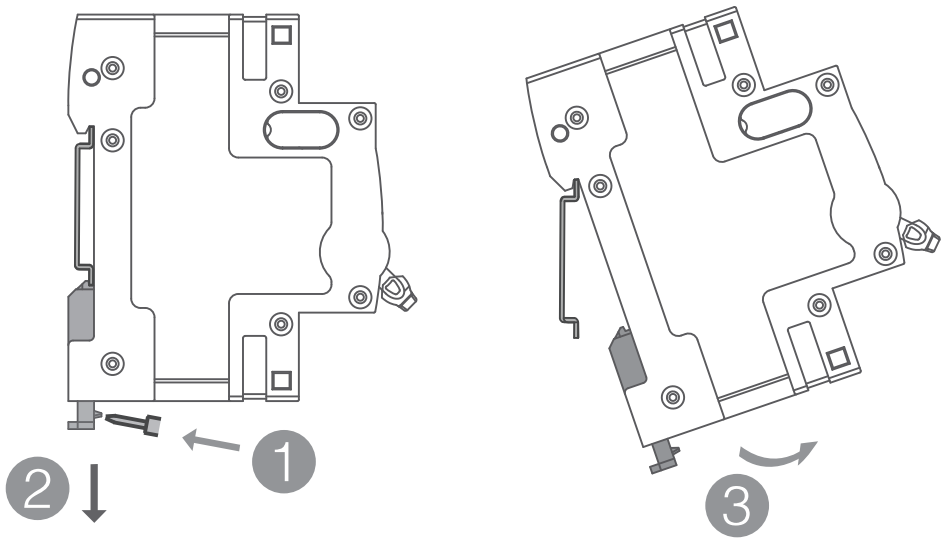


Figure 4 Dismantling

5.4 Suitable for connection using solid or stranded copper wire. Select respective cable cross-sectional areas according to cable type and operating current of the connecting load. Refer to table 2 and termination requirements.

Table 2 Selection of cable cross-sectional area related to operating current.

Rated current In (A)	Copper wire cross-sectional area (mm^2)
16	2.5
20	
25	4
32	6
40	10
50	
63	16
80	25
100	35

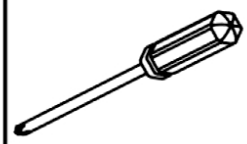
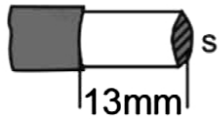
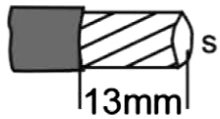
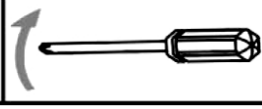
Wiring Tool		 2# screw driver
Wiring capacity (mm^2)		2.5~50
		2.5~35
Torque (N•m)		2.5~3.5

Figure 5 Wiring requirements

5.5 The circuit breaker can be assembled with AL/AXL alarm contacts, AX auxiliary contacts, SHT shunt release, UVT under-voltage release.

6 Maintenance

Circuit breakers should be inspected regularly to ensure proper operation.

In the event the circuit breaker trips due to an overload or short-circuit, the fault should be cleared and unit should be checked before restoring power to the circuit.

7 Fault analysis and troubleshooting

Table 3 Example of Fault Analysis and Troubleshooting

Fault description	Fault description	Possible rectification
Toggle handle cannot be latched in close position.	Is there a short circuit at the load side?	Locate fault or faulty circuits, cleared the fault before restoring power.
	Malfunction of latching mechanism.	Replace faulty unit.
	The rated current of the circuit breaker does not matched the load current.	Replace unit with correct rating and specification.

Continued Table 2

Fault description	Fault description	Possible rectification
High temperature rise	The cable or comb busbar is not properly secured.	Check the screw terminal(s) and cable termination if it secured and tightened. Re-tighten where necessary.
	Cables are not adequately sized to match load operating current.	Replace with correct cable(s) size to match the required operating current.
Failure to trip during a fault conditions	The selected circuit breaker rating does not match the working conditions of the load.	Replace unit with correct rating and specification.
No power connected with breaker ON	The stripped cable length is insufficient and cannot conduct electricity properly.	Strip the cable to the correct length.
	Screw terminals are not tightened or cables are not properly secured.	Tighten the loosen terminal screws.

8 Warranty period, environmental protection, and other legal regulations

8.1 Warranty period

Under standard storage and transportation conditions, provided product itself and packaging remain undamaged, the warranty period is 36 months from the date of manufacture. The following instances are excluded from warranty coverage.

1) Damage resulting from improper use, storage or maintenance by user.

2) Damage resulting from repairs or modifications by unauthorized institition, personnel, or by users themselves.

3) The product has surpassed the warranty period.

4) Damage caused by force majeure events.

8.2 Environmental protection

To support environmental protection, please ensure proper disposal of this product or its components as industry waste when scrapping. Alternatively,

they may be sent to a recycling facility for sorting, disassembly, and recycling, in compliance to international regulations and local regulations.

CHINT

QC PASS

NB8-125R
Moulded Case Circuit Breaker
IEC/EN 60947-2

Inspection: check 12

Test date: Please see The packing

ZHEJIANG CHINT ELECTRICS CO.,LTD.

CHINT ELECTRICS

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User manual

Zhejiang Chint Electrics Co., Ltd.

Add: No.1, CHINT Road, CHINT Industrial Zone,North Baixiang,
Yueqing, Zhejiang 325603,P.R.China

E-mail: global-sales@chint.com

Website: http://en.chint.com