

## 1 Use

NB3L-40 3P+N circuit breaker, mainly used for AC 50Hz / 60Hz, rated voltage AC 400V / 415V, rated current 6A to 40A, overload, short circuit and leakage protection of electrical lines and equipment, can also be used as infrequent connection and disconnection of the line.

## 2 Standard

The product performance meets the requirements of IEC/EN 61009-1.

## 3 Product classification

3.1 Classified according to the number of poles, it belongs to 3P+N (a four pole circuit breaker with three protective poles, N poles can be opened and closed)

3.2 According to the rated current, include 6A, 10A, 13A, 16A, 20A, 25A, 32A, and 40A

3.3 Rated voltage: AC 400 / 415V.

3.4 According to the instantaneous tripping current points are: type B, type C, type D.

3.5 Residual current rated: 30 mA, 100 mA and 300 mA.

## 4 Technical data

4.1 Basic specifications and parameters are shown in Table 1.

Table 1 Residual current action characteristics:

Rated voltage (V)	Rated current In(A)	Rated residual current I <sub>r</sub> -n(mA)	Rated residual inductive current I <sub>r</sub> -no(mA)	Maximum breaking time (s)		
				I-n	2I-n	5I-n
AC400/415	6~40	30	15	0.1	0.05	0.04
		100	50			
		300	150			

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4.2 Rated residual switching and breaking capacity (I<sub>∞</sub>m) are shown in Table 2.

Table 2 Rated residual connection and breaking capacity:

Rated current In (A)	Rated voltage (V)	Rated residual making and breaking capacity (I <sub>∞</sub> -m)	Power factor COSφ
6~40	AC400/415	6000A	0.65~0.7

4.3 The time current characteristic band (tripping characteristic) of the circuit breaker is determined by the conditions and values specified in Table 1. Table 3 refers to the installation of circuit breakers according to reference conditions and their operation at a reference calibration temperature of 30-35 °C.

Table 3 Time Current Action Characteristics:

Test	Type	Test current	Initial state	Tripping or non tripping time limit	Expected Result	Note
a	B C D	1.13In	cold state <sup>a</sup>	t ≤ 1h	Not trip	
b	B C D	1.45In	Following test <sup>c</sup>	t < 1h	Trip	The current steadily increases within 5s.
c	B C D	2.55In	cold state <sup>a</sup>	1s < t < 60s (to In ≤ 32A) 1s < t < 120s (to In > 32A)	Trip	
d	B C D	3 In 5 In 10 In	cold state <sup>a</sup>	t ≤ 0.1s	Not trip	Turn on the current by closing the auxiliary switch
e	B C D	5 In 10 In 14 In	cold state <sup>a</sup>	t < 0.1s	Trip	Turn on the current by closing the auxiliary switch

<sup>a</sup> The term 'cold' refers to the test without load at the reference calibration temperature.

4.4 The short-circuit breaking capacity of the 6.2 circuit breaker is shown in Table 4.

Table 4 Short circuit breaking capacity:

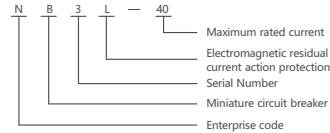
Rated current (In)	Rated short-circuit capacity (Icn)	Operating short-circuit capacity (Ics)	Power factor
1A ≤ In ≤ 63A	10000A	7500A	0.45-0.5

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4.5 Mechanical and Electrical endurance

Electrical endurance 10000 times, mechanical endurance 20000 times.

## 5 Product model number and its meaning



## 6 Normal use conditions

6.1 The ambient air temperature does not exceed +40°C, and the average temperature within 24h does not exceed +35°C. The lower limit of the ambient air temperature is -5°C.

6.2 The altitude of the installation site shall not exceed 2,000 m.

6.3 The air is clean, and the relative humidity of the air does not exceed 50% at the maximum temperature of +40°C. High relative humidity can be allowed at lower temperatures, for example at +20°C.

6.4 Apply to the environment with a pollution grade of 2.

6.5 The circuit breaker is installed with TH 35-7.5 installation guide rail.

6.6 The installation category of the circuit breaker is usually of class II, III.

6.7 The circuit breaker is installed in the normal working position, the tilt of the installation surface and the vertical surface is not more than ± 5°, and the product can also be installed horizontally.

6.8 Wiring mode: column wiring terminal connection.

## 7 Overall dimensions and installation

7.1 Appearance and installation dimensions (see Figure 1)

7.2 Installation and adjustment

7.2.1 The following matters shall be noted before installing the circuit breaker:

- Check the circuit breaker to confirm that it is intact. Manual operation needs several times before power on, and the handle should be flexible.
- Check whether the logo content of the circuit breaker is consistent with the working conditions used.
- The rated current size of the selected circuit breaker should match with the actual use line.

7.3 Installation

7.3.1 TH 35-7.5 guide rail is installed, and the guide rail specification is shown in Figure 2.

7.3.2 Put the circuit breaker into the rail at the upper end of the installation guide rail, and push the buckle end of the circuit breaker into the guide rail, see Figure 3.

7.3.3 Remove the circuit breaker by pulling the buckle. See Figure 3 for the schematic diagram of the disassembly.

7.3.4 Product wiring diagram, see Figure 4.

7.3.5 Connection capacity: 1mm<sup>2</sup> ~25mm<sup>2</sup>

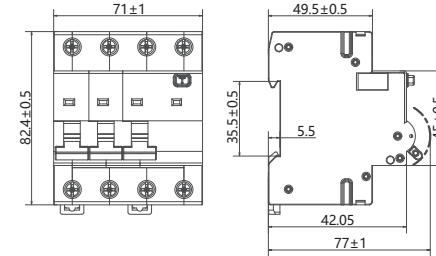


Figure 1. AUB7HLM-3P+N Outline Installation Dimensional Drawing

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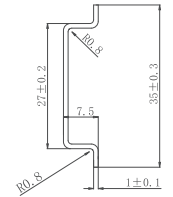


Figure 2. TH35-7.5 rail

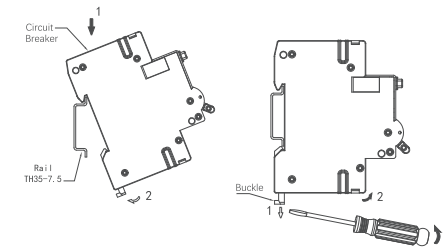


Figure 3. Installation and disassembly

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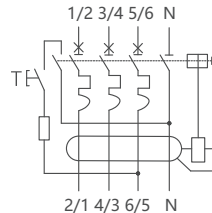


Figure 4. Wiring diagram

## 8 Transportation and storage conditions, use and maintenance

8.1 Circuit breakers (including packing products) shall not be attacked by rainwater in the process of transportation, storage and use.

The product is placed in an environment with air circulation, monthly average humidity not more than 90% (at 20°C ± 5°C), air temperature not higher than +70°C and not less than -25°C. If different from the conditions specified in 6.1, the manufacturer and the user shall reach a special agreement.

8.2 In the circuit breaker, the leakage function should be tested every 6 months, and should be checked regularly. The inspection cycle should be determined depending on the working conditions. The power supply should be cut off during inspection. The main items of inspection include:

- Remove dust and dirt, especially pay attention to the dirt between the incoming and outgoing poles, to prevent a short circuit between the poles.
- Check whether the wire connection is loose, and the loose terminals should be tightened in time.

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## 9 Product warranty period and environmental protection requirements

9.1 Quality guarantee period of products is 18 months.

9.2 The environmental protection requirements conform to the EU RoHS 2.0 standard.

## 10 Ordering examples:

NB3L-40 C40 3PN 30mA A 100 : Residual Current Operated Circuit Breaker 3P+N, Residual current 30mA, type A, 100

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# QC PASS

NB3L-40 Residual Current Operated Circuit Breaker  
IEC/EN 61009-1

**Check 023**

Test date: Please see the packing

ZHEJIANG CHINT ELECTRICS CO., LTD.

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NB3L-40 Residual Current Operated Circuit Breaker User Instruction

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NB3L-40 Residual Current Operated Circuit Breaker

User Instruction

Standard: IEC/EN 61009-1