

YCB9RL-100 series


Residual Current Operated
Circuit Breaker

OPERATION INSTRUCTION

Standard: IEC 60898-1

CNC

Deliver
Power For Better Life

 Before installing and using this product,
please read this manual carefully and
pay more attention to safety.

YCB9RL-100 series

Residual Current Operated Circuit Breaker

Instructions

1 General

YCB9RL-100 residual current operated circuit breaker without over-current protection (hereinafter referred to as RCCB) is suitable for AC 50Hz/60Hz, rated voltage up to 415V, rated current up to 100A, for residual current protection. When the human body gets an electric shock or the network leak current exceeds the specified value, the residual current operated circuit breaker can rapidly cut off the human body and the powered equipment. It is used in housing, tertiary sector and in dustry. The product meets the standards of IEC 61008-1.

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

2.1 Use Conditions:

2.1.1 Ambient temperature: -5°C to $+40^{\circ}\text{C}$.

2.1.2 Air conditions: At the mounting site, the relative humidity should not exceed 50% at the maximum temperature of $+40^{\circ}\text{C}$. For the wettest month, the maximum average relative humidity should be 90% while the lowest average temperature in that month is $+20^{\circ}\text{C}$. Special measures should be taken to prevent condensation.

2.1.3 Altitude: $\leq 2000\text{m}$.

2.1.4 Pollution degree: 2.

2.1.5 Protection degree: Ip20.

2.1.6 The installation category is II and III.

2.1.7 This product is not suitable for directly starting high inductive and high capacitive loads such as fans, motors, electric heaters, capacitor cabinets, etc.

2.1.8 This product does not provide protection against electric shock hazards caused by simultaneous contact with both protected circuit wires.

2.2 Installation Conditions:

2.2.1 The external magnetic field at the installation site should not exceed 5 times the geomagnetic field, while adhering to safety precautions. Residual current operated circuit breakers should generally be installed directly, in a location free from shaking, impact, and vibration.

2.2.2 The product must not be installed in environments containing flammable or explosive gases, or in damp and condensing areas. It is strictly prohibited to operate the product with wet hands.

2.2.3 Do not install the product in locations where the gas medium can corrode metal or damage insulation.

2.2.4 The product must be wired and installed by qualified personnel, who should also conduct regular inspections.

2.2.5 Please strictly follow the wiring diagram for correct wiring of the product.

2.2.6 During installation and use, the terminal screws should be tightened, and the wires should not be

loose or pulled out. Select wires according to the requirements and connect them to the power source and load as specified.

2.2.7 Foreign objects should be prevented from entering the product to avoid affecting its normal operation.

2.3 Packaging, Transportation, and Storage Conditions:

2.3.1 Ensure secure packaging to prevent any damage during transportation and handling.

2.3.2 Use appropriate packaging materials such as sturdy cartons or boxes to provide sufficient impact and moisture protection.

2.3.3 Use suitable cushioning materials such as foam or bubble wrap to provide additional protection and prevent any physical damage.

2.3.4 Securely seal the packaging with strong adhesive tape or strapping to ensure the contents remain intact.

2.3.5 Handle with care during transportation to avoid any physical damage.

2.3.6 During storage and transportation, avoid dropping or exposure to rainwater or corrosive gases.

2.3.7 If transporting the product by vehicle, ensure proper fixation to prevent movement or damage during transit.

2.3.8 Comply with all applicable transportation regulations and guidelines for the safe handling and transportation of electrical equipment.

2.3.9 Store the product in a clean, dry, and well-ventilated environment to prevent moisture damage.

2.3.10 Keep the product away from direct sunlight, extreme temperatures, humidity, and corrosive substances.

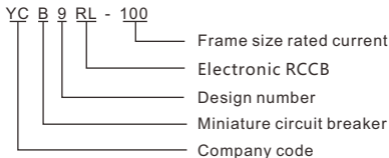
2.3.11 Store in the original packaging or suitable storage containers to prevent dust, dirt, and physical damage.

2.3.12 Ensure the storage area is free from any potential mechanical stress or sources of impact.

2.3.13 Regularly inspect stored products for any signs of damage. If any issues are found, contact the manufacturer or qualified electrician for further guidance.

3 Basic parameters

3.1 The model and meaning of the circuit breaker are as follows:



3.2 The basic specifications and technical parameters of the circuit breaker are shown in Table 1, breaking time of the AC type residual current operating is shown in Table 2, breaking time of the A type half-wave residual current operating is shown in Table 3.

Table 1

Poles	Rated residual operating current $I_{\Delta n}$	Frequency Hz	Rated voltage U_e/V	Rated current I_n/A	Detectable wave form	Rated residual Making and Breaking capacity $I_{\Delta m}$	Rated short circuit capacity I_{cn}
2P	0.03A /0.1A /0.3A	50/60	AC240	16A, 25A, 32A, 40A, 50A, 63A, 80A, 100A	AC type A type	630A	10kA, 6kA
4P			AC415				

Table 2

$I_n(A)$	$I_{\Delta n}(A)$	Breaking time when the residual current is the following values (s)			
		$I_{\Delta n}$	$2I_{\Delta n}$	$2I_{\Delta n}^2$	
16, 25, 32, 40, 50, 63, 80, 100	0.03, 0.1, 0.3				5A, 10A, 20A, 50A, 100A, 200A, 500A
		0.3	0.15	0.04	0.04

Note a: For general RCCB with $I_{\Delta n} \leq 0.03A$, 0.25A can be used instead of $5I_{\Delta n}$.

Table 3

In(A)	IΔn(A)	Breaking time when the residual current is the following values (s)							
		1.4IΔn	2IΔn	2.8IΔn	4IΔn	7IΔn	0.35A	0.5A	350A
16, 25, 32, 40, 50, 63, 80, 100	0.03, 0.1, 0.3	0.3	0.3	0.15	0.15	0.04	0.04	0.04	0.04

3.3 Wiring

Before installation, check whether technical parameter of the circuit breaker is in conformity with user's requirement. The conductor of power supply shall be connected to the up terminal of circuit breaker. During installation, the tightening torque is max 2.5N·m~4.0N·m. The sectional area of connecting wire can refer to Table 4.

Table 4

Rated Current In(A)	Conductor cross-sectional area S(mm ²)
10 and below	1.5
10~20	2.5
20~25	4
25~32	6
32~50	10
50~63	16
80~100	25

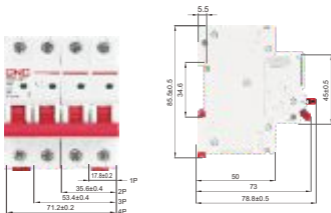
3.4 Wire connection

Before installation, check whether technical parameter of the circuit breaker is in conformity with user's requirement. The conductor of power supply shall be connected to the up terminal of circuit breaker. During installation, the tightening torque is max 2.5N•m. The sectional area of connecting wire can refer to Table 4.

Table 4

Rated current In A	conductor cross section S mm ²
6	1
10	1.5
16, 20	2.5
25	4
32	6
40, 50	10
63	16
80	25

4 Overall and mounting dimensions



5 Ordering instruction

5.1 When ordering, the customer shall indicate the product type, tripping curve, rated current, number of poles, accessories and quantity of the circuit breaker. For example:

YCB9-80M C25 1P 180pcs.

5.2 Customers can negotiate separately if you have special requirements.

6 Operation and Maintenance

6.6.1 This document provides detailed instructions for the installation, operation, and maintenance of these products. Please read and follow these instructions carefully to ensure safe and proper use.

6.2 It is strictly prohibited to touch the conductive parts of the product during operation. Children are strictly prohibited from playing with the product or its packaging.

6.3 It is strictly prohibited to test the performance of the product by directly touching the grounding device with a live wire or short-circuiting the live and neutral wires.

6.4 Ensure that the power supply is disconnected when installing, repairing, or maintaining the product.

6.5 The protective characteristics of the product are set by the manufacturer and should not be disassembled or adjusted arbitrarily.

6.6 The product must be wired and installed by qualified personnel, who should also conduct regular inspections.

6.7 After the product is installed, visually inspect all connections to ensure they are secure and show no signs of obvious damage. Before supplying power to the circuit, ensure that all electrical loads are disconnected. Once the circuit is powered, the product will monitor the current and detect any leakage or fault current. In the event of a fault or leakage current exceeding the set threshold, the product will trip and cut off the power to prevent electric shock.

6.8 When the product trips, identify and troubleshoot the issue before resetting the device. To reset the product after tripping, switch it to the OFF position and then back to the ON position.

6.9 Regularly inspect the product for any signs of damage, wear, or corrosion.

6.10 Clean the equipment using a soft, dry cloth. Do not use abrasive cleaners or solvents.

6.11 Perform regular testing of the product using appropriate testing equipment according to the manufacturer's recommendations or local regulations. If any abnormalities or faults are discovered during testing or inspection, contact a qualified electrician for further assessment and necessary repairs. Do not attempt to repair or modify the equipment yourself. Leave all maintenance work to authorized service personnel.

6.12 If you have any questions or need further assistance, consult the manufacturer or a qualified electrician.



CERTIFICATE

Product Model: YCB9RL-100 series

Standard: IEC 61008-1

Inspector : **CNC006**

Production date: Printed on the product
or package.

This product is qualified according
to the delivery inspection

CNC ELECTRIC

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