

YCB9LE-80M series


RESIDUAL CURRENT OPERATED
CIRCUIT BREAKER

OPERATION INSTRUCTION

Standard: IEC 61009-1

CNC

Deliver
Power For Better Life

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

YCB9LE-80M series

Residual Current Operated Circuit Breaker Instruction

1 General

YCB9LE-80M residual current operated circuit breaker with over-current protection (hereinafter referred to as RCBO) is suitable for AC 50Hz/60Hz, rated voltage up to 415V, rated current up to 80A, for residual current protection, over load and short circuit 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. With the function of overload and short circuit protection, the residual current operated circuit breaker can be used to protect the circuit or motor from being damaged by overload and short circuit, and can also be used for not-frequent operational transformation in the circuit under normal condition.

The product meets the standards of IEC 61009-1.

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.

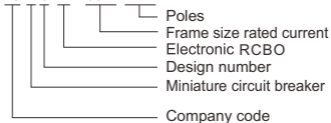
2.3.12 Ensure the storage area is free from any

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 Type designation

Y C B 9 L E - 80 M 1 P + N



3.2 The basic specifications and technical parameters of the circuit breaker are shown in Table 1, and breaking time of the residual current operating is shown in Table 2.

Table 1

Poles	Rated residual operating current $I_{\Delta n}$	Frequency Hz	Rated voltage U_e/V	Rated current I_n/A	Tripping type	Rated residual Making and Breaking capacity $I_{\Delta m}$	Rated short circuit capacity I_{cn}	Type(wave form of the earth leakage sensed)
1P+N 2P 3P+N 4P	0.03A /0.05A /0.1A /0.3A $I_{\Delta no} = 0.5I_{\Delta n}$	50/60	AC230 /400	1, 2, 3, 4, 6, 10, 16, 20, 25, 32, 40, 50, 63, 80	B, C, D	500 ($I_n \leq 40A$); 630 ($I_n > 40A$)	6kA	A/AC

Table 2

In(A)	IΔn(A)	Breaking time when the residual current is the following values (s)				
		IΔn	2IΔn	5IΔn a	5A~200A 500A b	IΔt c
1~80	0.03/ 0.05/ 0.1/0.3	0.1	0.05	0.04	0.04	0.04

a. For general RCBO with $I\Delta n \leq 0.03A$, 0.25A can be used instead of $5I\Delta n$.

b. The test of 5A ~ 200A, 500A is only performed for the verification of operation, and is not performed for the magnitude of current greater than the lower limit of the over-current instantaneous tripping range.

c. The test is carried out for the current with the $I\Delta n$ being equal to the lower limit of the over-current instantaneous tripping range for Type B ,Type C or Type D.

3.3 Over-current protection characteristic is shown in Table 3.

Table 3

Test	Type	Testing current	Initial state	Time limit for tripping or not tripping	Expected result	Testing environment temperature	Remarks	
a	B/ C/D	1.13In	Cold state	$t \leq 1\text{h}$ ($In \leq 63A$)	Not tripping	30 °C~35 °C	Current is rising within 5s	
	B/ C/D	1.45In	Right after test a	$t < 1\text{h}$ ($In \leq 63A$)	Tripping			
c	B/ C/D	2.55In	Cold state	$1\text{s} < t < 60\text{s}$ ($In \leq 32A$) $1\text{s} < t < 120\text{s}$ ($In > 32A$)	Tripping			
	B C D	3In 5In 10In	Cold state	$t \leq 0.1\text{s}$	Not tripping			Turn on the power supply by dosing the auxiliary switch
e	B C D	5In 10In 20In	Cold state	$t < 0.1\text{s}$	Tripping			

Note: The terminology "Cold state" means that the test is performed at the base calibration temperature with no load prior to the test.

3.4 Mechanical and electrical life is show in Table 4

Table 4

Item	Times	Operating frequency (times/hour)	Power factor
Electrical life	4000	240 times per hour($I_n \leq 25A$)	Cos $\Phi=0.85\sim 0.9$
Mechanical life	10000	120 times per hour($I_n > 25A$)	

3.5 Wiring

Before installation, check whether technical parameter of the circuit breaker is in conformity with user 's requirement.

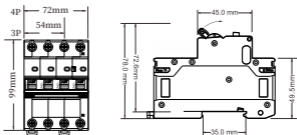
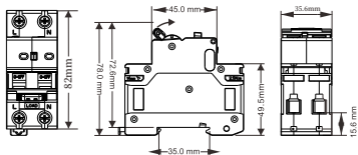
The conductor of power supply shall be connected to the up terminal of circuit breaker. During installation, the tightening torque is max 2.5N*m.

The sectional area of connecting wire can refer to Table 5.

Table 5

Rated Curent $I_n(A)$	Conductor cross-sectional area $S(mm^2)$
≤ 6	1
≤ 13	1.5
≤ 20	2.5
≤ 25	4
≤ 32	6
≤ 50	10
≤ 63	16
≤ 80	25

4 Overall and mounting dimensions(mm)



5 Ordering instructions

5.1 When ordering, the customer shall indicate: the product name of RCBO, model, rated current, rated residual operating current, instantaneous tripping type, number of poles, quantity.

For example: YCB9LE-80M C 63 1P+N
0.03A 880units.

5.2 Special requirements of customers can be negotiated separately.

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: YCB9LE-80M

Standard: IEC 61009-1

Inspector : **CNC003**

Production date: Printed on the product
or package.

This product is qualified according
to the delivery inspection

CNC

YCB9LE-80M series

CNC ELECTRIC

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