


YCM8C Series

External Circuit Breaker

OPERATION INSTRUCTION

CNC

Deliver
Power For Better Life

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

1.Usage

The YCM8C series external circuit breaker(hereinafter referred to as"circuit breaker")has a rated insulation voltage of 1000V, and is suitable for power distribution networks with AC 50Hz or 60Hz, rated voltage of 400V and below, and rated current up to 1250A. Under normal circumstances, the circuit breaker can be used as infrequent on-off control for circuits and infrequent starting for motors.

Standards:IEC60947-2;IEC60947-1;

37-SDMS-05 REV.1;ASTM B633 II.

2.Working environment

2.1. Temperature range for storage and transportation: -10℃ to 85℃;

2.2. Operating range: -10℃ to 75℃;

2.3. Reference temperature: 55℃;

2.4. Atmospheric conditions: maximum temperature of 75℃ and maximum relative humidity of 95%;

2.5. External magnetic fields at the installation site must not exceed 5 times the strength of the earth's magnetic field, and the product should be kept away from strong electromagnetic interference (such as high-power motors or inverters). There should be no explosive or corrosive gases, no exposure to rain or snow, and the environment should be dry and well-ventilated;

2.6. Pollution level: level 3; installation category: category III.

3.Technical data

3.1. Rated working voltage: U_e AC400V/AC230V

3.2. Rated control voltage of the electric operating mechanism: 230V

3.3. Rated frequency: 50/60Hz

3.4. Rated insulation voltage U_i : AC1000V

3.5. Rated withstand impulse voltage: U_{imp} 8kV

3.6. Minimum switching power per phase 30kVA

3.7. Circuit breaker protection level: IP30

3.8. Insulation resistance $\geq 1000M\Omega$

3.9. Contact resistance $\leq 500\mu\Omega$

3.10. Dielectric strength between dynamic and static contacts (incoming and outgoing lines) $\geq 2000V$ AC/1min, dielectric strength between contacts and coils $\geq 3000V$ AC/1min

3.11. Dielectric strength between phases $\geq 4000V$ AC/1min

3.12. Rated instantaneous short-circuit current setting value: $10I_n \pm 15\%$

Table 1

In(A)	Ue±5%(V)	Icu(kA)	Ics(kA)
250 to 250	240	35	35
	415	25	25
250~630	240	50	50
	415	35	25
630~1000	240	65	65
	415	40	40

3.14. The electric operating mechanism of the circuit breaker can reliably operate the circuit breaker for switching on and off at 85%~110% of the rated control power supply voltage.

3.15. The electric operating mechanism of the circuit breaker is powered by an independent power supply of 230V and is not related to the main circuit power supply. Under the condition of no power supply in the main circuit and power supply in the control circuit, the electric operating mechanism can work normally and operate the circuit breaker to open and close according to the specified logic.

3.16. Operating performance capability of the circuit breaker

Each operating cycle includes: switching off after switching on (performance test without current), or switching off after switching on (performance test with current).

Table 2 Number of operating cycles

1	2	3	4	5
Rated current (A)	Operating cycles per hour	No current	With current ³	Total
$I_a \leq 100$	120	8500	1500	10000
$100 < I_a \leq 315$	120	7000	1000	8000
$315 < I_a \leq 630$	60	4000	1000	5000
$630 < I_a \leq 1000$	20	2500	500	3000

1) Refers to the maximum rated current of a given frame level.

2) The second column provides the minimum operating frequency.

3) During each operating cycle, the circuit breaker should remain closed for sufficient time to ensure full current, but not exceeding 2 seconds

3.17 Temperature rise limit of circuit breaker

Under the condition that the main circuit of the circuit breaker is energized with the rated current and the control circuit is energized with the maximum rated control voltage, the temperature rise value of each component of the circuit breaker shall not exceed the required values specified in Table 3.

Table 3

Component Name	Temperature rise limit value(K)
External connection terminal	
Manual operating component	80
Metal part	
Non-metallic part	25
Touchable but not hand-held component	35
Metal part	
Non-metallic part	40
Non-touchable component during normal operation	50
Metal part	50
Non-metallic part	60

4. Product feature configuration

The operation interface of the electric operating mechanism is shown in Figure 1.

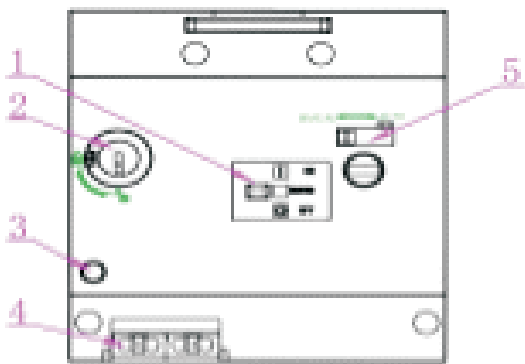
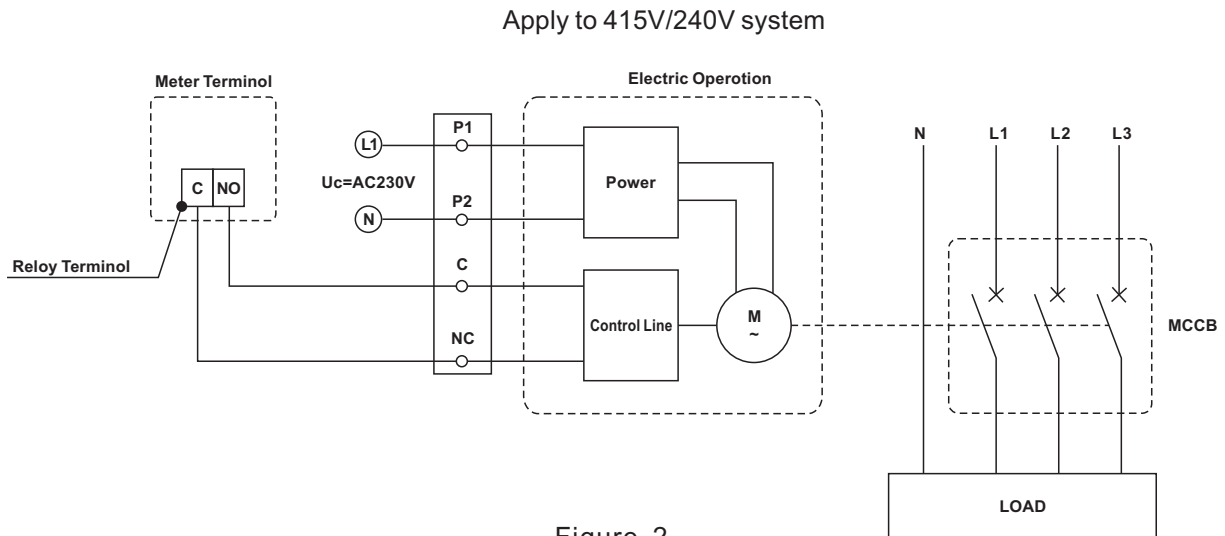


Figure 1

1. Circuit breaker status indication window
2. Mechanism lock
3. Tripping button
4. Power and control wiring ports
5. Manual and automatic switching of cover plates

5. Electrical control schematic diagram and explanation

5.1 Electrical control schematic Figure 2.



5.2. Connection and Operation Instructions

5.2.1. P1 and P2 are the power supply connection terminals for operation. P1 and P2 are isolated from the main circuit of the circuit breaker and can withstand AC 2000V/1min of AC voltage without breakdown or flashover. The use of a withstand voltage tester complies with the requirements of IEC60947-1.

5.2.2. C and NC are the energy meter control line connection terminals. The open/close control signal (the normally passive contact of the relay is normally open or closed) on the meter is connected to C and NC. When the relay of C and NC is connected through the open/close control signal on the meter, the circuit breaker is in the state of allowing the closing operation. When the relay of C and NC is disconnected through the open/close control signal on the meter, the circuit breaker is in the open state. The circuit breaker opening/closing time is $\leq 5s$.

5.2.3. When the relay of C and NC is disconnected through the open/close control signal on the meter, the circuit breaker cannot be kept in the closed state when manually operated to close. (passive signal)

5.2.4. When the circuit breaker panel lock is in the locked state, the circuit breaker cannot be closed regardless of whether the relay of C and NC is connected through the open/close control signal on the meter. Only when the circuit breaker panel lock is in the unlocked state, the circuit breaker can be closed by the relay of open/close control signal on the meter or manually operated to close.

5.3. See Table 4 for the control status of the circuit breaker.

Serial Number	Control power	Control signal line	Panel lock	Control mode	Initial state	Post-operation status	Note
1	AC230V	from off to on	unlock	Automatic	opening	closing	(Control signal from off to on) Received closing signal
2	AC230V	keep connected	unlock	Manual	closing	opening	Manual opening
3	AC230V	keep connected	unlock	Manual	opening	closing	Manual closing
4	AC230V	from on to off	unlock	—	closing	opening	(Control signal from on to off) Received opening signal
5	AC230V	from on to off	unlock	—	opening	opening	(Control signal from on to off) Received opening signal
6	AC230V	keep disconnected	unlock	—	opening	opening	Control signal disconnected, manual closing not allowed
7	AC230V -0V 0V-AC 230V	ON	unlock	—	closing	closing	Before the power outage, the line is in a closed state, and after the power outage, it is not allowed to open and then close again
8	AC230V -0V 0V-AC 230V	OFF	unlock	—	opening	opening	Before the power outage, the line is in an open state, and after the power outage, the line is powered on again. It is not allowed to close or reopen after closing
9	0V	—	unlock	—	opening	opening	The line is powered off and remains in the original state
10	0V	—	unlock	—	closing	closing	The line is powered off and remains in the original state
11	—	—	lock	—	—	—	Panel lock locked, circuit breaker in tripped position

6. Structure and Dimensions

6.1.The circuit breaker is a three-pole (3P) type, with simultaneous operations for opening, closing, and tripping.

6.2.The circuit breaker can have incoming wires at the top and outgoing wires at the bottom, or incoming wires at the bottom and outgoing wires at the top.

6.3.The circuit breaker can have thermal-magnetic or electronic protection.

6.4.If the installation thickness of the circuit breaker box is limited and affects the closing of the box door, a sinking installation bracket can be provided to ensure that the box door can be closed normally after installation. The bracket is made of metal material and has an anti-rust coating with a thickness of not less than 1.5mm.

6.5. The circuit breaker wiring method for the terminal block is shown in Figure 3, Figure 4-1, Figure 4-2, and Figure 5, where the terminals are made of tin-plated copper.

6.6. Figure 3 shows a wiring structure with a rated current of 250A (including 250A) and the same suspension ring structure for incoming and outgoing wires; Figure 4 shows a rated current of 400A (including 400A) with incoming and outgoing wires, and Figure 4-1 shows a busbar arrangement for incoming and outgoing wires at the bottom; Figure 4-2 shows a copper post-type terminal block for incoming and outgoing wires at the top; and Figure 5 shows a terminal block arrangement for incoming and outgoing wires with a rated current of 500A (including 500A) or higher.

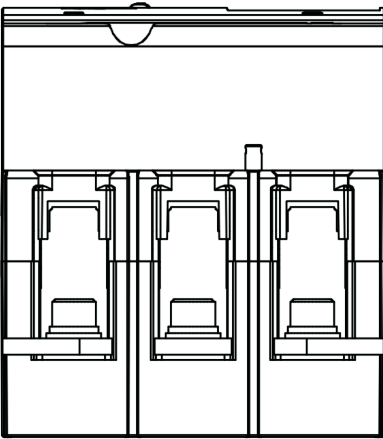


Figure 3

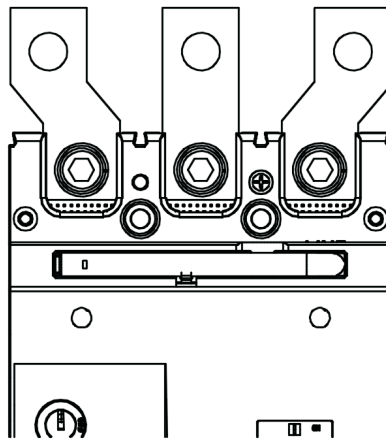


Figure 4-1

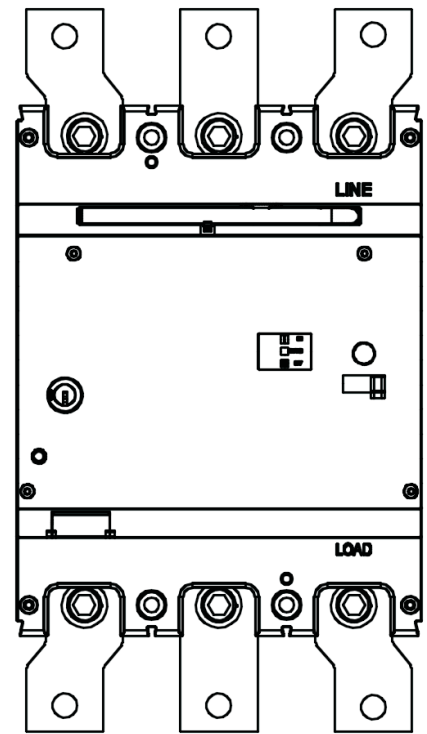


Figure 5

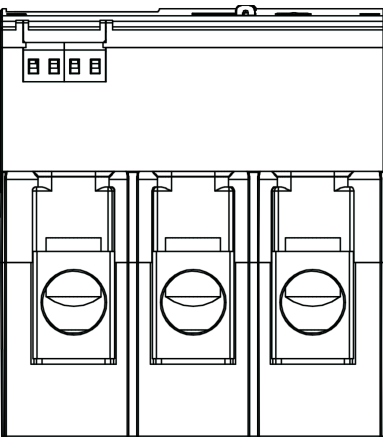
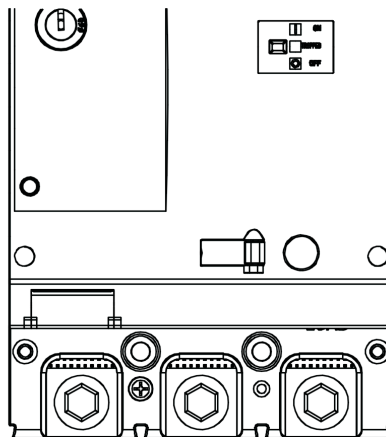


Figure 4-2



6.7 Overall dimensions of the body

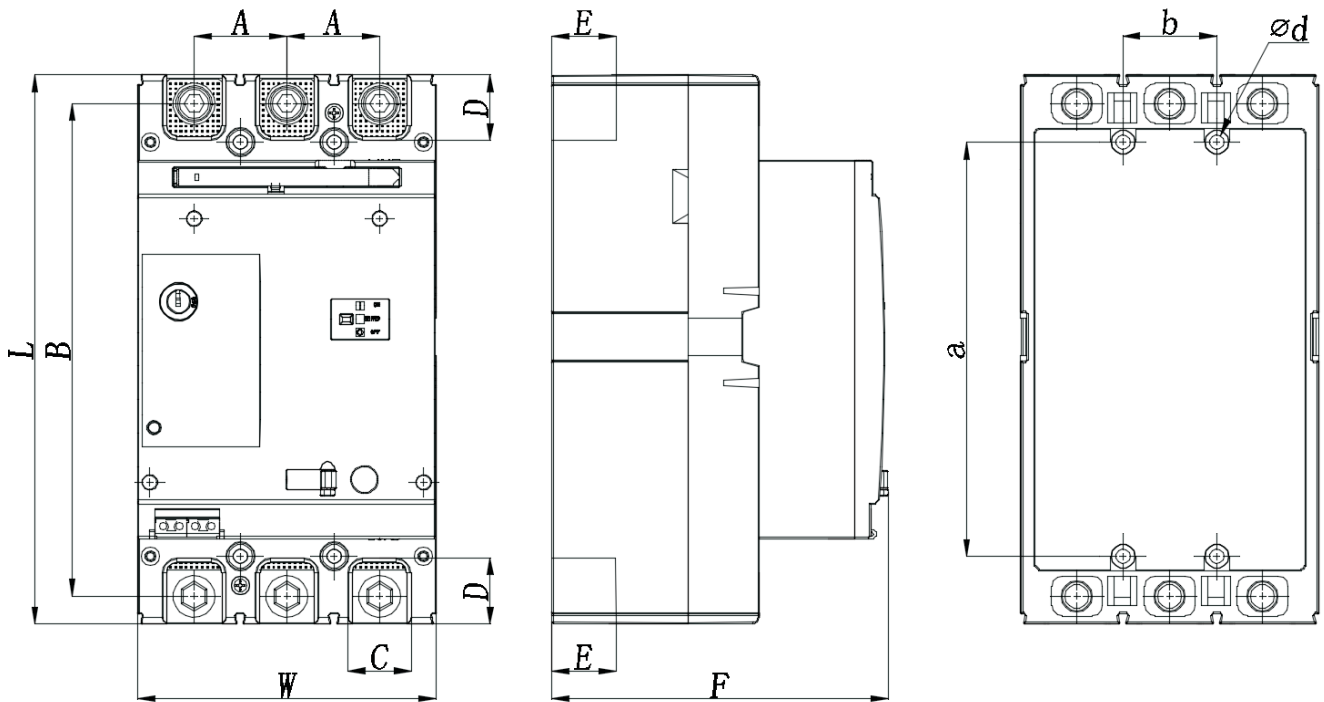


Figure 6

Table 5 (Unit: mm)

Specifications	250/3P	400/3P	630/3P	800/3P	1000/3P
L	165	257	275.5	275.5	275.5
W	105	140	210	210	210
A	35	43.5	70	70	70
B	144	230	243.5	243.5	243.5
C	24	31	45	45	45
D	21	29	30	30	30
E	22.5	30	24	26	28
F	118	160	175	175	175
a	126	194	243	243	243
b	35	44	70	70	70
ød	4×Φ4.5	4×Φ7	4×Φ8	4×Φ8	4×Φ8

6.8 Dimensions with protective cover

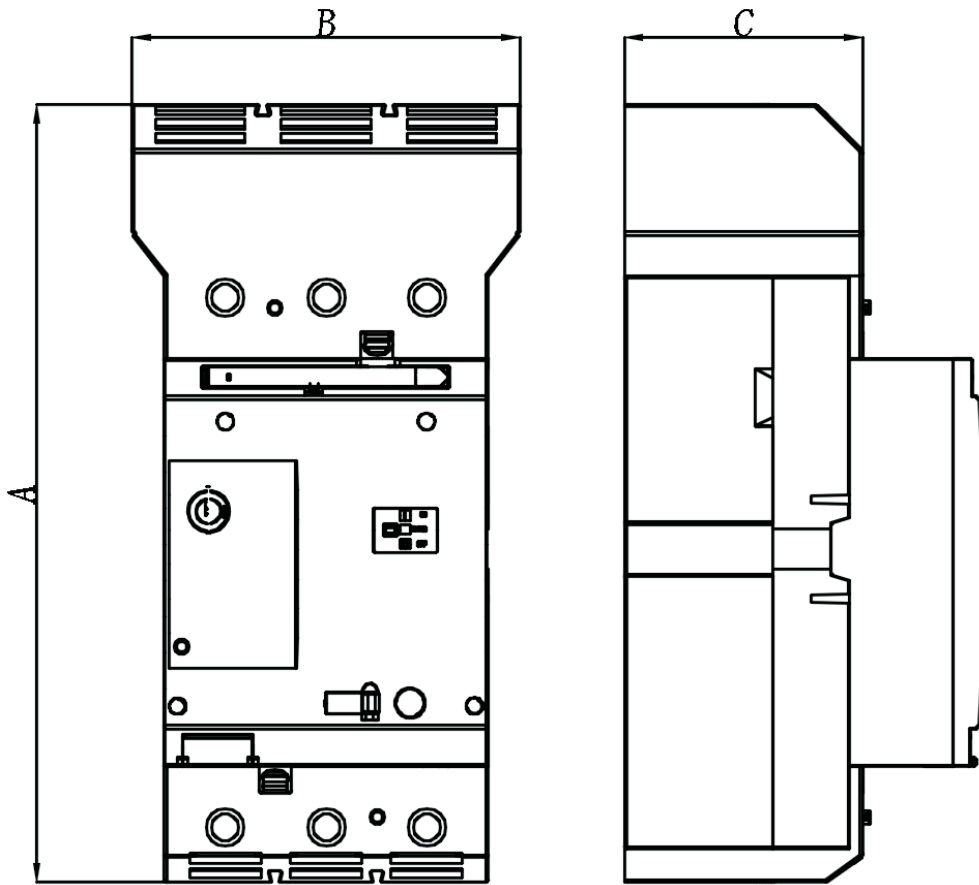


Figure 7

Specifications	250/3P	400/3P	630/3P	800/3P	1000/3P
A	208	278	418	418	418
B	105	140	238	238	238
C	67.5	103	103	103	103

7. Installation and Usage Precautions

To ensure your personal safety and the safety of your electrical equipment, please make sure to do the following before operating the circuit breaker:

- 7.1. Carefully read the product user manual and the ECB installation and operation guide before installing and using the circuit breaker.
- 7.2. Before installing and using the circuit breaker, confirm that its specifications and model are in compliance with requirements.
- 7.3. The circuit breaker must be used under the specified normal operating conditions.
- 7.4. The control signal and power lines must be securely connected to prevent loosening.
- 7.5. After all connections of the circuit breaker are made, check that everything is correct before turning on the power switch.
- 7.6. The circuit breaker should be installed correctly and should not be subject to abnormal mechanical stress.
- 7.7. Do not use excessive force when operating the circuit breaker buttons.

8. After-Sales Service

- 8.1. Warranty period: The warranty period is 36 months from the date of shipment.
- 8.2. During the warranty period: If there is a quality issue caused by our company's manufacturing, our company will be responsible for replacement or repair. If the product is damaged due to improper use, exceeding standard use dropping, damage during installation, weather conditions, natural disasters, or other reasons caused by the user, our company will be responsible for paid repair or replacement.
- 8.3. After the warranty period: If the product can be repaired to maintain its function, paid repair service is available. Otherwise, paid replacement service is available.
- 8.4. If the circuit breaker has a malfunction, please contact our after-sales service department promptly.



CERTIFICATE

Product Model: YCM8C Series

Inspector: CNC 009

Production date: Printed on the product
or package.

This product is qualified according
to the delivery inspection

CNC ELECTRIC

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