



日煬國際事業股份有限公司
JD Auspice Co., Ltd.

JDA-5M-250V Molded Case Circuit Breaker (AC1000V) - Series Molded Case Circuit Breakers User Manual





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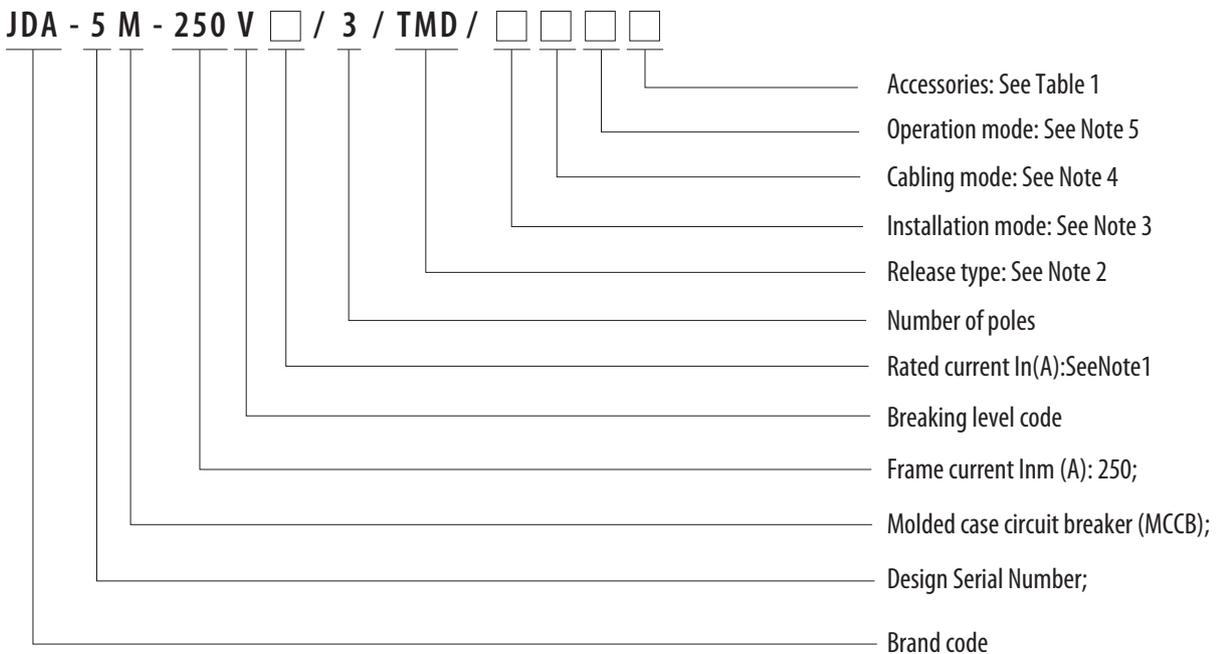
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1. Application Scope and Purpose

JDA-5M-250V series Molded Case Circuit Breaker (referred to as Circuit breaker), the rated insulation voltage is 1000V, applicable to circuit with AC 50Hz(or 60Hz), the rated working voltage to AC 1000V, and the rated working currents are 63A,80A,100A,125A, 160A,200A, 250A. The circuit breakers are used for distributing power while protect the overload, short circuit and under-voltage (with a under-voltage release) of lines and power units. It also can be used to protect the motor infrequent starting, braking, overload and short circuit . The circuit breaker has an isolating function with the corresponding symbol of . Comply with standards : IEC 60947-2 、 GB/T 14048.2 °

2. Model Description



Note : 1) line current in (A): 63 、 80 、 100 、 125 、 160 、 200 、 250

2) Off-button code:TMD(distribution protection)

63A-125A: Thermal Adjustable (0.8-0.9-1.0) In,
Magnetic fixed;

160A-250A : Thermal Adjustable (0.8-0.9-1.0) In,
Magnetic adjustable (5-6-7-8-9-10) In

3) Installation mode:Fixed: No code

4) Wiring mode: Front wiring: No code

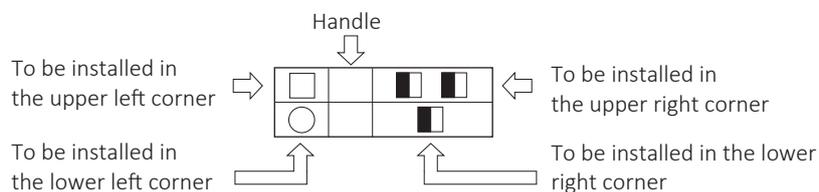
5) Mode of operation: Direct handle operation: No code



Table 1

Accessory code	Accessory name	Installation position
00	None	—
08	Alarm contact	
10	Shunt trip	
30	Under-voltage trip	
21	Single auxiliary contact	
61	Two sets of single auxiliary contacts	
23	Three sets of single auxiliary contacts	
18	Shunt trip , alarm contact	
38	Under-voltage trip , alarm contact	
22	Single auxiliary contact, alarm contact	
88	Two sets of single auxiliary contacts, alarm contact	
26	Three sets of single auxiliary contacts, alarm contact	
42	Shunt trip , single auxiliary contact, alarm contact	
44	Shunt trip , two sets of single auxiliary contacts, alarm contact	
46	Shunt trip , three sets of single auxiliary contacts, alarm contact	
75	Under-voltage t rip , single auxiliary contact, alarm contact	
77	Under-voltage trip , two sets of single auxiliary contacts, alarm contact	
81	Under-voltage trip , th ree sets of single auxiliary contacts, alarm contact	
41	Shunt trip , single auxiliary contact	
11	Shunt trip , two sets of single auxiliary contacts	
12	Shunt trip , three sets of single auxiliary contacts	
71	Under-voltage trip , single auxiliary con tact	
72	Under-voltage trip , two sets of single auxiliary contacts	
73	Under-voltage trip , three sets of single auxiliary contacts	

Note: ■ Single auxiliary contact; □ Alarm contact; ● Shunt release; ○ Under-voltage release





3. Main Technical Parameters

Frame current Inm	250A	
Rated current In	63A、80A、100A、125A 、160A、200A、250A	
Rated voltage Ue	AC800V、AC1000V	
Rated frequency(Hz)	50/60	
Rated impulse withstand voltage Uimp	8000V	
Rated insulation voltage Ui	1000V	
Power frequency withstand voltage (1min)	3500V	
Rating breaking capacity Icu(kA)	AC800V	50
	AC1000V	30
Rating breaking capacity of rated operation Icu(kA)	AC800V	35
	AC1000V	15
Lifetime(time)	Mechanical life	25000
	Electrical life	1500

4. Operating Environment

- 1) Ambient air temperature: 40°C~+70 the average value with in 24 hours doesn't exceed +35
- 2) Storage environment: 40°C to +75°C
- 3) Altitude: ≤2000m
- 4) Atmospheric conditions: ambient air temperature of +40°C, with a relative humidity of 95%
- 5) Class of pollution: 3
- 6) Protection class: IP20
- 7) Installation category: main circuit and under voltage release: installation category III; auxiliary circuit and control circuit: installation category II
- 8) In an explosion free medium, where there is not enough media to corrode the metal and to destroy the insulating gas and conductive dust
- 9) Should be installed where there is no rain or snow.

Note: JDA-5M-250V the tripping parameters of the circuit breaker are pressed +40°C ring temperature setting, ambient temperature at +40°C~+70°C user needs to reduce the use of capacity, the reduction coefficient see "Product temperature change coefficient table."

5. Cautions

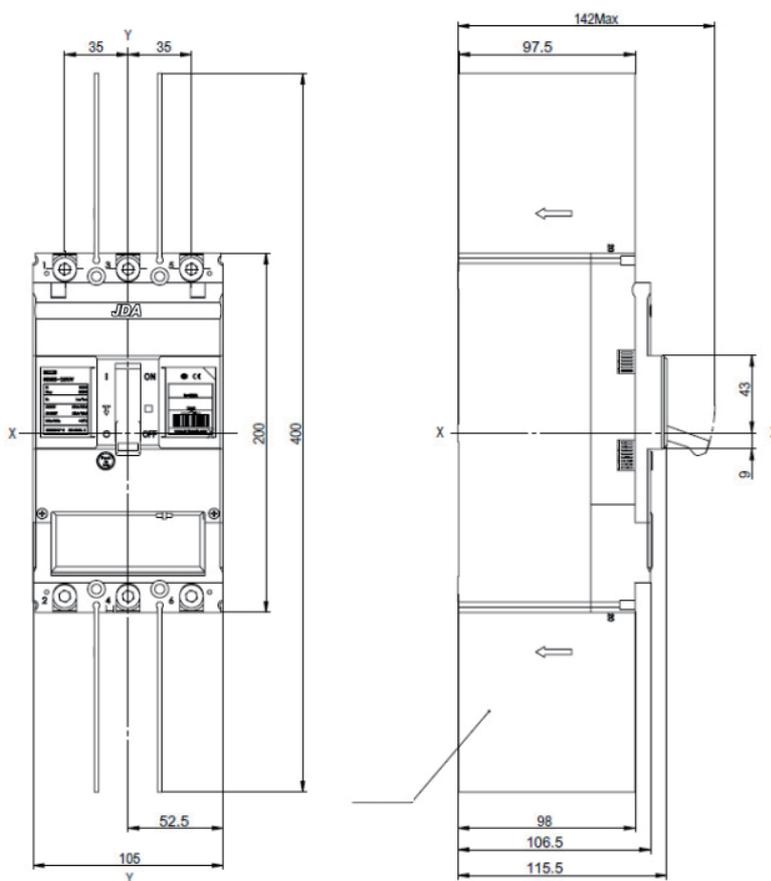
- 1) Unpackaging inspection: except for circuit breakers, user manuals and certificates in the packaging box, installation screws and related accessories are required
- 2) The circuit breaker, tripping unit or other accessories can only be installed and maintained by the trained or qualified professionals
- 3) Ensure that the power supply is off before in stalling or removing any device



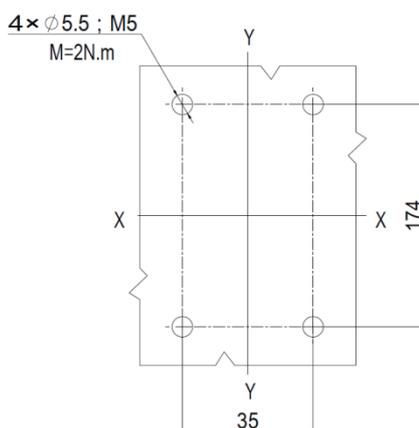
4) The installation and use of this manual are sui table for normal conditions. For special requirements, put the equipment into use after consulting the company with formal confirmation and re adjusting parameters by the company.

6. External Dimensions and Installation Dimensions

1) External dimensions of front plate connection products

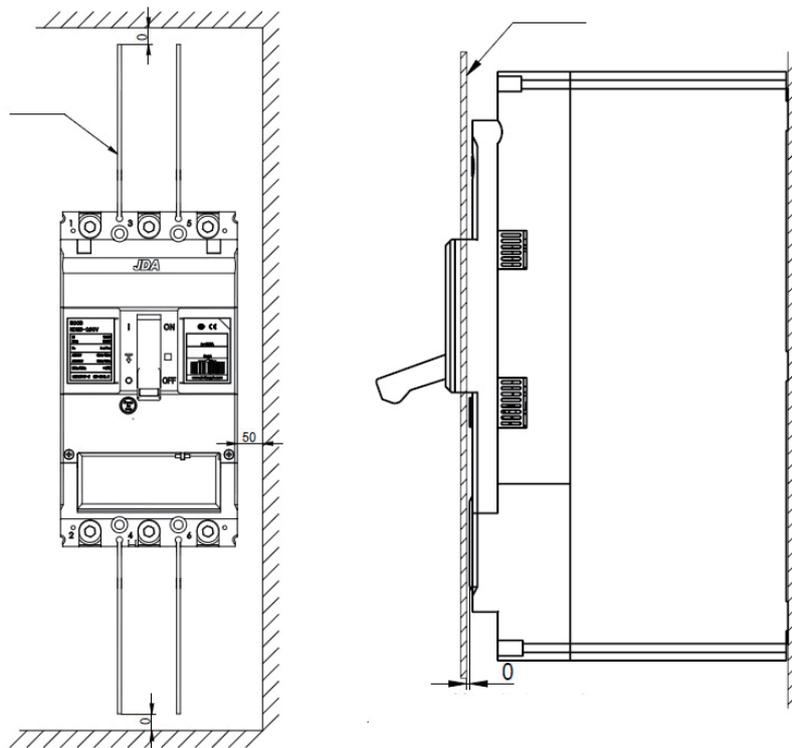


2) Dimensions of mounting holes installed on the base plate



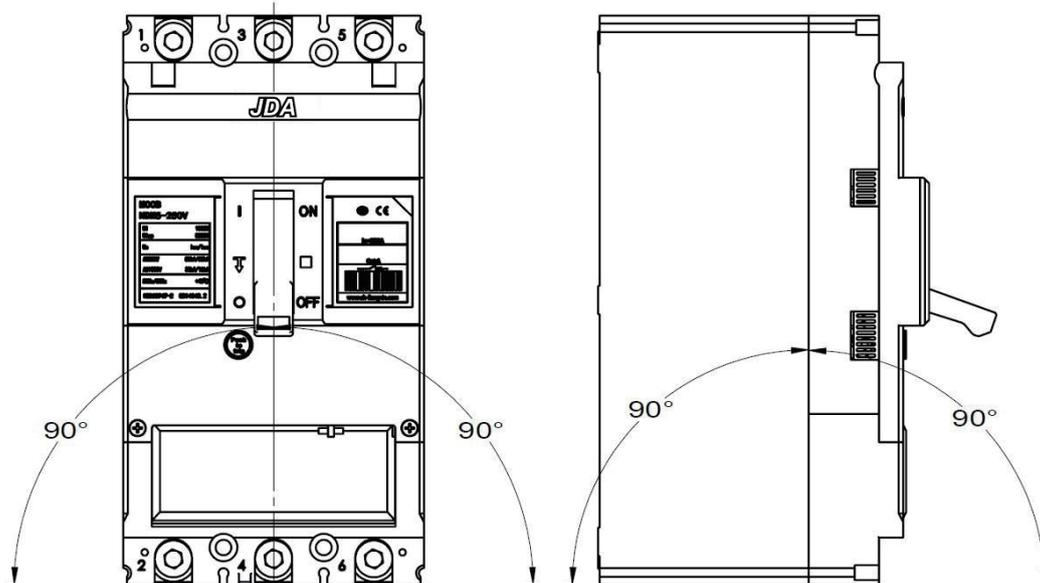
3) Safety spacing

See the figure below for the minimum safety distance of the circuit breaker from the top, bottom, side and front panel during installation.



4) Installation mode

The product allowable installation mode is shown as the figure below.





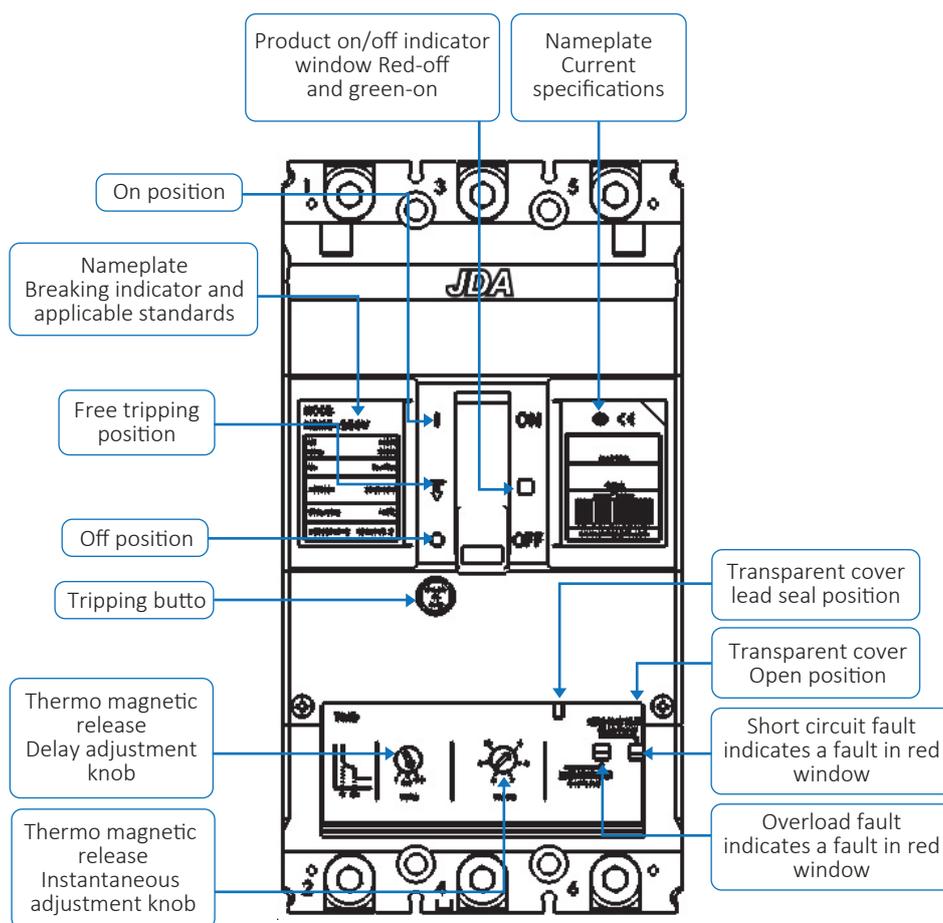
7. Operation

1. JDA-5M-250V thermo-magnetic release

1) Operation of the JDA-5M-250V thermo-magnetic distribution release

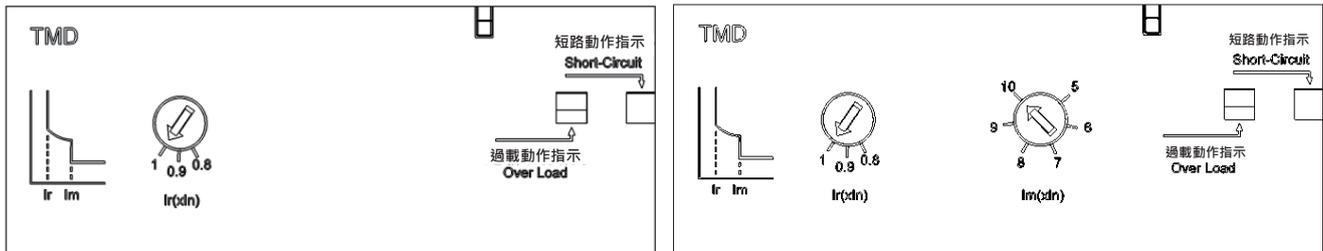
When the circuit breaker is in off state, insert a small flathead screwdriver into the open position on the transparent cover of the release to open the cover, and then insert the screwdriver into the flathead arrow slot on the adjustment knob; turn the arrow on the flathead slot of the adjustment knob to align with the required peripheral scale and then close the transparent cover of the release. Lock and seal the transparent cover in the lead seal position if necessary.

2) Structure and identification description of JDA-5M-250V products





3) Label diagram of the JDA-5M-250V thermo-magnetic AC distribution release.



Distribution protection (63A 125A)

Distribution protection (160A 250A)

4) Parameter setting and function description of the JDA-5M-250V thermo magnetic AC distribution release

Setting gear of the overload long time delay Ir	0.8In, 0.9In, 1.0In	
Setting gear of the instantaneous short circuit	63A-125A: 10In (accuracy ±20%) 160A-250A: 5In, 6In, 7In, 8In, 9In, 10In (accuracy ±20%)	
Action time	63A	1.05 In (cold state) doesn't operate within 1 hour, 1.3 In (thermal state) operate within 1 hour
	80A、100A、125A、160A、200A、250A	1.05 In (cold state) doesn't operate within 2 hours, 1.3 In (thermal state) operates within 2 hours
160A-250A: It features the thermo magnetic parameter dual-adjustable functions and dual-display functions of overload and short-circuit fault actions		

5) Derating factor table after the product temperature and altitude change

Ambient Temperature Derating Factor Table of the JDA-5M-250V Molded Case Circuit Breaker

Ambient air temperature	Correction factor
40°C	1.0
45°C	0.97
50°C	0.941
55°C	0.913
60°C	0.885
65°C	0.859
70°C	0.833

Note:

1. The above derating factors are measured at the frame current;
2. When the operating ambient temperature is below + 40°C, the product can be used normally without derating capacity.



2. Product Power Consumption

Single-phase Power Consumption Table of JDA-5M-250V Product Current Specifications

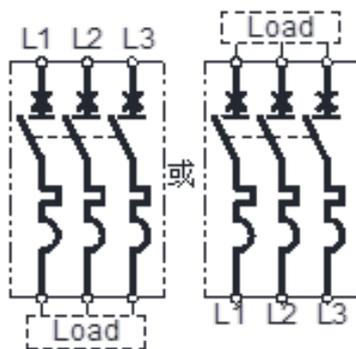
Product Model	Current specifications	Single-phase power consumption (W)
JDA-5M-250V	63A	5
	80A	8.3
	100A	10
	125A	7.8
	160A	12.8
	200A	20
	250A	21.8

Note: The above data is the single power consumption of the circuit breaker measured at an ambient temperature of 40°C when the frame current is on.

8. Connection

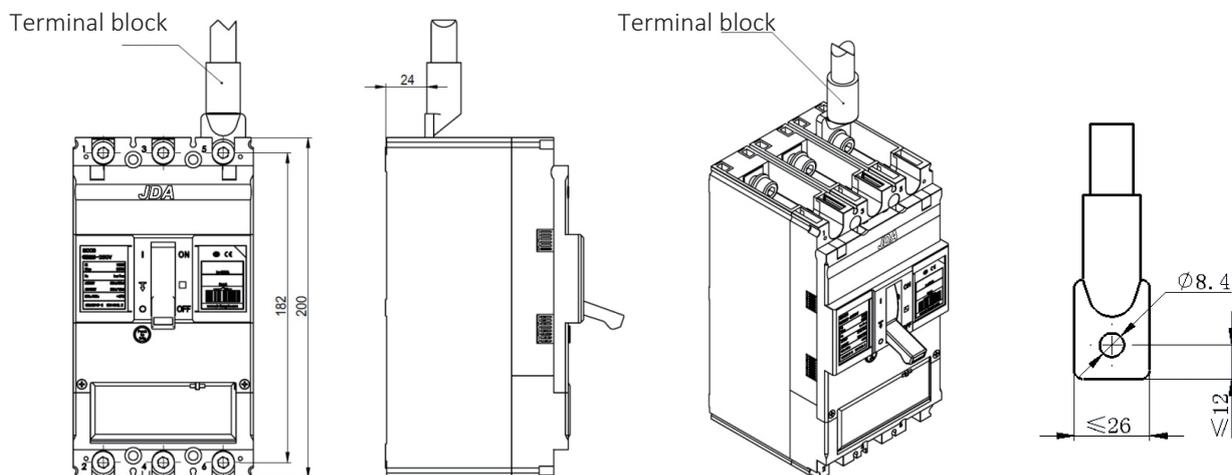
1. Wiring diagrams of the product main circuit

1) Wiring Diagrams of Main Circuits



Wiring Diagrams

2. Connection of the front plate copper bar or copper cable with terminal blocks



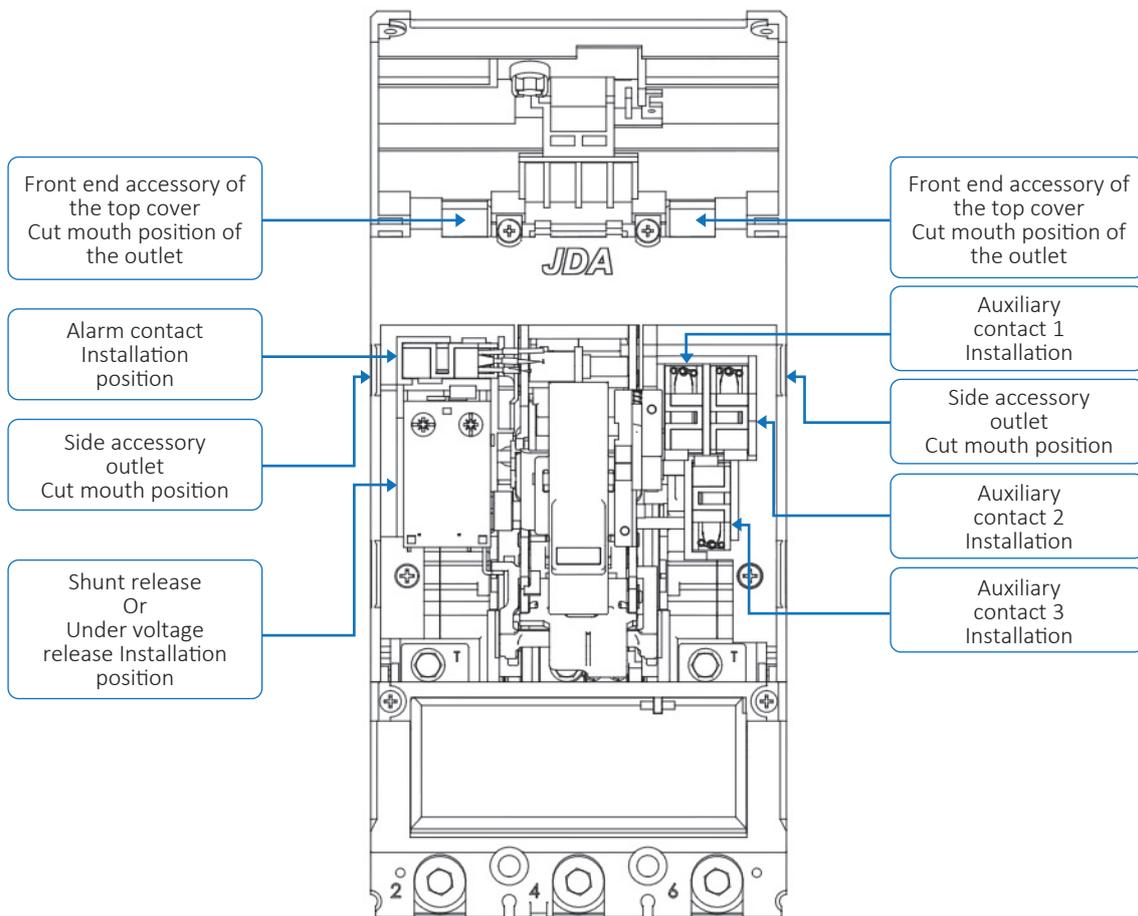


3. Reference section of the connecting wire

Rated current (A)	63	80	100	125	160	200	250
Wire cross-section area (mm ²)	16	25	35	50	70	95	120
Tightening torque value of the terminal screw M8	Tightening torque 15N.m						

9. Operation Instructions for Accessories

1. Installation Position Diagram of Internal Accessories



2. Rated parameters of the auxiliary contact

Accessory name		Auxiliary contact
Voltage specifications (V)/conventional thermal current (Ith)		AC250V/10A, DC220V/0.2A
Wiring diagram	Off	
	On	
Internal resistance		< 30 mΩ



3. Rated parameters of the alarm contact

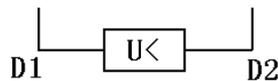
Accessory name		Auxiliary contact
Voltage specifications (V)/conventional thermal current (Ith)		AC250V/3A, DC220V/0.2A
Wiring diagram	On, off	
	Free tripping	
Internal resistance		< 30 mΩ

4. Under-voltage release

When the power voltage drops to the range (35%~70%) of the under-voltage release, the release can break the circuit breaker reliably; when the power voltage is 35% lower than the rated working voltage of the under-voltage release, the release can prevent closing of the circuit breaker; when the power voltage is 85% higher than the rated working voltage of the under voltage release, the release can guarantee reliable closing of the circuit breaker.

Voltage specifications of the under-voltage release: AC110V/DC110V, AC230V/DC250V, AC400V

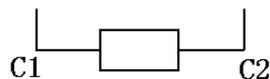
Accessory name	Accessory name		
Voltage specifications (V)	AC110/DC110	AC230/DC250	AC400
Power consumption (W)	0.5	1.0	1.5



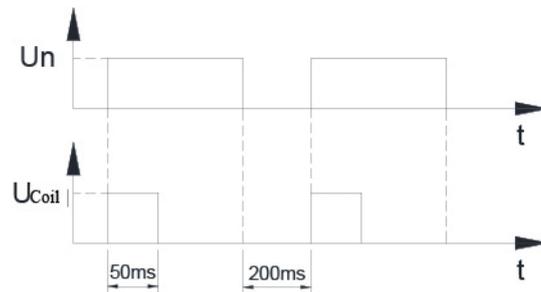
5. Shunt release

When the external voltage of the shunt release is between 70% and 110% of the rated control power voltage, the release can break the circuit breaker reliably.

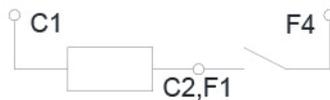
Accessory name	Accessory name			
Voltage specifications (V)	AC24/DC24	AC48/DC48	AC110/DC110	AC230/DC250
Power consumption (W)	20	13	8	19



Working principle of the shunt release: a single pulse action. If another action is required, the shunt release can only be operated after being off, reset and energized.



To make the circuit breaker fail to be closed normally during long-term energization, an auxiliary contact in series is required.



6. The standard wire length of the inter accessory is 0.7m.

Note: Users must propose to the sales personnel of the special requirements of the accessory wire length.

10. Use and Maintenance

1. Confirm that terminal connections and fastening screws are tightened without loosening;
2. Confirm whether partitions between circuit breakers are installed properly;
3. The circuit breaker handle can be located in three positions, indicating three states: on, off and free tripping. When the handle is in the free tripping position, pull the handle in the direction of the off position when the circuit breaker is connected and on;
4. For the circuit breaker installed with an under-voltage release, connect the release to the rated voltage before closing operation of the circuit breaker; when the circuit breaker is on, disconnect the under-voltage release; at this time, the circuit breaker shall be tripped reliably and not closed;
5. For the circuit breaker installed with an auxiliary contact and alarm contact, the auxiliary contact signal must be normally converted during the on/off state of the circuit breaker; the alarm contact signal must be normally converted by pressing the emergency trip button;
6. If the circuit breaker is installed with an electric or manual operating mechanism, perform the on/off operation 3 ~5 times with the operating mechanism to ensure the reliable and normal operation.
7. Users shall obey the storage and use conditions. In case of product damage or abnormal use due to manufacturing quality issues within 36 months from the date of factory delivery, the factory shall be responsible for free maintenance or replacement;
8. The circuit breaker is normally free of maintenance, but we advise maintenance once monthly according to the following conditions:
 - a) Press the emergency trip button in the closing state to confirm whether the operating mechanism of the circuit breaker is reliable;
 - b) Clean the partition and replace it if necessary;
 - c) Check all connections, wipe the oxide with gauze and clean it with the dissoluble detergent, and then tighten bolts and nuts.



11. Common Faults and Troubleshooting

SN	Common faults	Possible reasons	Handling suggestions
1	The circuit breaker can't be closed	The handle is in the free tripping state.	Move the handle to the off position to make the product connected and then to the on position.
2		For products with under voltage release accessories 1. The under voltage release loop is lack of power supply. 2. The working voltage is below 80%Ue. 3. Fault of the under voltage delay release.	1. Check the line and turn on the power supply of the under voltage release. 2. Check that the power working voltage must exceed 85%Ue. 3. Replace the under voltage delay release.
3		An overload or short circuit occurs to the system.	Detect the line and perform troubleshooting.



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