

DC Moulded Case Circuit Breaker

» *Always for your safety*





Performance introduction

Features

EKM6DC series DC MCCB rated voltage up to DC1500V, and rated current up to 400A.

EKM6DC series DC MCCB breaking capacity can up to 10kA under voltage of DC1500V ,which has reliable protection system for short circuit

Standard

EKM6DC series DC MCCB conform to the following standard

IEC 60947-2

GB/T14048.2

Ambient and installation conditions

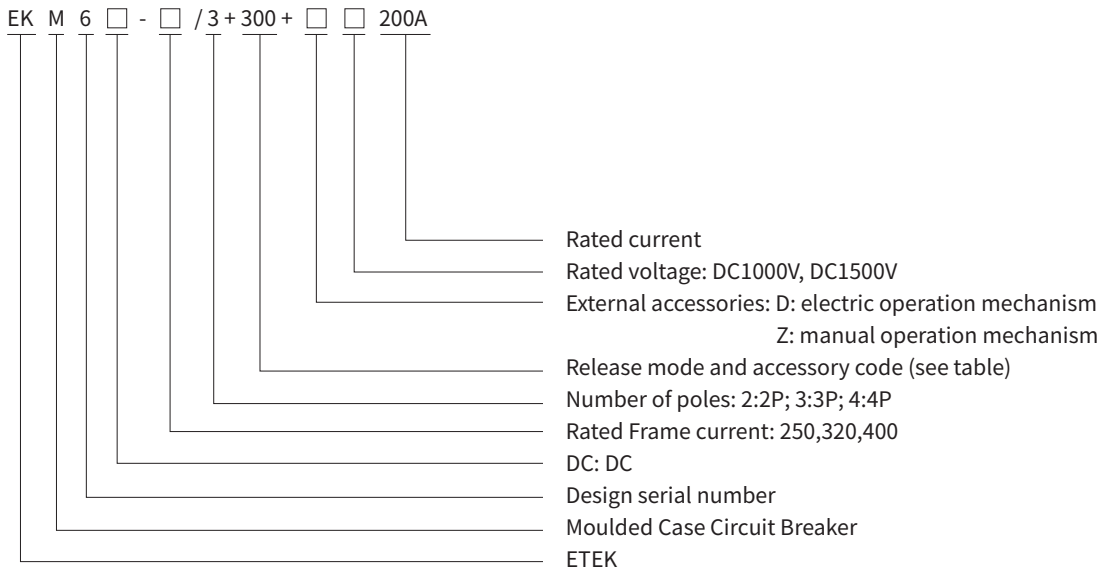
1. Altitude up to 2000m
2. It can withstand the effect of damp air (Three-Protections type) ①
3. It can withstand the effect of salt fog and oil mist (Three-Protections type) ①
4. It can withstand the effect of mould (Three-Protections type) ①
5. Places where the surrounding medium is free from explosion danger, and far away from gas and conduct dust that would erode the metal or destroy the insulation

Remarks: ① (Three-Protections type) MCCB should be specially customized, marked TH with your PO

Maintenance

The characteristics and accessories of circuit breaker are set by the manufacturer and can not be adjusted at will in use. Provided the user complies with the conditions of storage and use. The seal of the circuit breaker is intact within 24 months from the date of delivery by the manufacturer. If the product is damaged or cannot be used normally due to manufacturing quality problems, the manufacturer is responsible for replacement and repair without charge.


Meaning of model



Classification

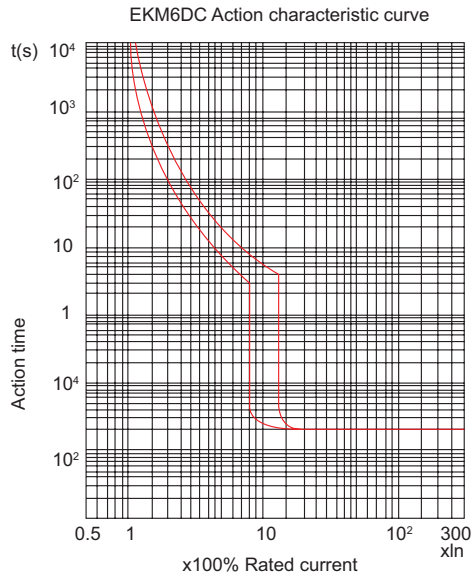
- According to the operation method:
- handle operation;
 - Operation by electric operating mechanism;
 - Operation by rotary handle.
- According to the protection form:
- Line protection;
 - Line isolation.
- According to the wiring form:
- Front panel wiring;
 - Rear panel wiring;
 - Plug in wiring;
 - Withdrawable wiring (frame current > 400A).

The main technical performance indicators

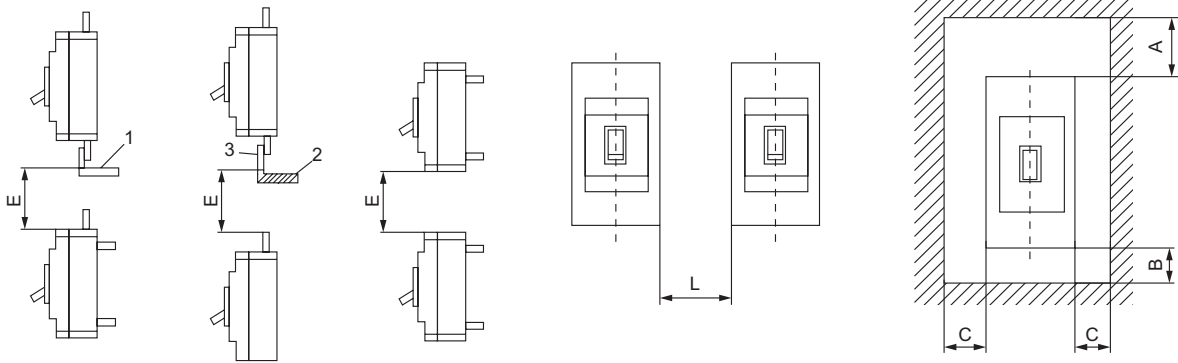
| | | | | | | |
|---|---|------|-----------------------|------|--------------------------|------|
| Appearance |  | | | | | |
| Model | EKM6DC-250 | | EKM6DC-320 | | EKM6DC-400 | |
| Rated frame current I_{nm} (A) | 250 | | 320 | | 400 | |
| Rated current I_n (A) | 125,140,160,180, 200,225,250 | | 280,315,320 | | 315,350,400 | |
| Poles | 2 | 3 | 2 | 3 | 4 | |
| Rated working voltage U_e (V)DC | 1000 | 1500 | 1000 | 1500 | 1000 | 1500 |
| Rated insulated voltage U_i (V) | 1000 | 1500 | 1000 | 1500 | 1500 | |
| Rated impulse-stand voltage U_{imp} (kV) | 12 | | | | | |
| Rated limited short-circuit breaking capacity I_{cu} (kA) | 10 | | | | | |
| Working short circuit breaking capacity I_{cs} (kA) | 10 | | | | | |
| Wiring | Top in and bottom out | | Top in and bottom out | | Bottom in and bottom out | |
| Mechanical life(total times) | 10000 | | | | | |
| Electrical life(total times) | 2000 | | | | | |
| Total breaking time(ms) | 20 | | | | | |
| Whether it has isolation characteristics | yes | | | | | |
| Standard | IEC 60947-2 GB/T 14048.2 | | | | | |
| Allowable ambient temperature | -40~+70°C | | | | | |
| Protection degree | IP20 | | | | | |
| Certification | CCC,CE,CB,TUV Certificate | | | | | |
| Accessories | Auxiliary, alarm,shunt release,manual operation mechanism, electric operation mechanism | | | | | |
| Arcing distance(mm) | ≥ 50 (Zero arc if with the arcing cover) | | | | | |
| Instantaneous tripping value | 10 I_n | | | | | |
| Outline dimensions(LxWxH)(mm) | 180x76x126(2P)/180x107x126(3P) | | | | 258x200x107(4P) | |
| Installation Method | Fixed type, plug-in type | | | | | |

Circuit breaker operating characteristic curve

EKM6 Operating characteristic curve



Safety distance when the circuit breaker is installed

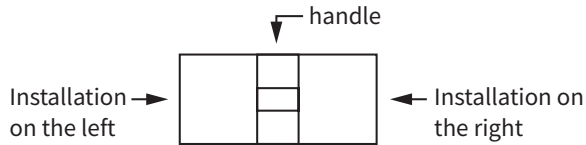


| No. | L | A | | B | C | E | |
|--------------|----|-------------------|----------------|----|----|-------------------|----------------|
| | | Without Arc cover | With Arc cover | | | Without Arc cover | With Arc cover |
| EKM6-63 | 40 | 50 | 30 | 25 | 25 | 50 | 30 |
| EKM6-100 | | 50 | 30 | 25 | 25 | 50 | 30 |
| EKM6-250/320 | | 50 | 30 | 25 | 25 | 60 | 60 |
| EKM6-400 | | 50 | 30 | 25 | 25 | 60 | 60 |

In the picture: 1 no insulated link; 2 insulated wire; 3 cable terminal

Release method and accessory code

Distinguish according to the type of release: instantaneous release only (electromagnetic release: 2000); thermal + electromagnetic release (combined type: 300)



- Alarm contacts
- Auxiliary contacts
- Shunt release
- Undervoltage release
- ➔ Release wire direction

| Accessory code | Accessory name | EKM6DC250/320 | EKM6DC-400 |
|----------------|--|---------------|-------------|
| | | 2,3 Pole | 4 Pole |
| 200,300 | No internal accessories | — | — |
| 208,308 | Alarm contacts | — | ➔ □ □ |
| 210,310 | Shunt release | — | □ □ ● ➔ |
| 220,320 | Auxiliary contacts(1NO 1NC) | ➔ ■ □ □ | — |
| | Auxiliary contacts(2NO 2NC) | — | ➔ ■ □ □ |
| 202,302 | Auxiliary contacts(2NO 2NC) | — | — |
| 230,330 | Undervoltage release | — | ➔ ○ □ □ ➔ |
| 240,340 | Shunt release Auxiliary contacts(1NO 1NC) | ➔ ■ □ □ ➔ | — |
| | Shunt release Auxiliary contacts(2NO 2NC) | — | ➔ ■ □ □ ● ➔ |
| 212,312 | Shunt release Auxiliary contacts(2NO 2NC) | — | — |
| 250,350 | Shunt release Undervoltage release | — | ➔ ○ □ □ ● ➔ |
| 260,360 | Two groups of auxiliary contact(2NO 2NC) | — | — |
| | Two groups of auxiliary contact(4NO 4NC) | — | ➔ ■ □ ■ □ ➔ |
| 222,322 | Two groups of auxiliary contact(3NO 3NC) | — | — |
| 223,323 | Two groups of auxiliary contact(4NO 4NC) | — | — |
| 270,370 | Undervoltage release Auxiliary contacts(1NO 1NC) | — | — |
| | Undervoltage release Auxiliary contacts(2NO 2NC) | — | ➔ ○ □ ■ ➔ |
| 232,332 | Undervoltage release Auxiliary contacts(2NO 2NC) | — | — |
| 218,318 | Shunt release Alarm contacts | — | ➔ □ □ ● ➔ |
| 228,328 | Auxiliary contacts(1NO 1NC)Alarm contacts | — | — |
| | Auxiliary contacts(1NO 1NC)Alarm contacts | — | ➔ ■ □ □ ➔ |
| 238,338 | Undervoltage release Alarm contacts | — | ➔ ○ □ □ ➔ |
| 248,348 | Shunt release Auxiliary contacts(1NO 1NC) Alarm contacts | — | — |
| | Shunt release Auxiliary contacts(2NO 2NC) Alarm contacts | — | ➔ ■ □ □ ● ➔ |
| 268,368 | Two groups of auxiliary contact(2NO 2NC) Alarm contacts | — | — |
| | Two groups of auxiliary contact(4NO 4NC) Alarm contacts | — | ➔ ■ □ ■ □ ➔ |
| 205,305 | Two groups of auxiliary contact(3NO 3NC) Alarm contacts | — | — |
| 278,378 | Two groups of auxiliary contact(1NO 1NC) Undervoltage release Alarm contactsAlarm contacts | — | — |
| | Two groups of auxiliary contact(2NO 2NC) Undervoltage release Alarm contactsAlarm contacts | — | ➔ ○ □ ■ ➔ |

Auxiliary contact

Auxiliary contact current parameters

| Rated frame current | Rated thermal current I _{th} | Rated working current at ac 400v |
|----------------------|---------------------------------------|----------------------------------|
| I _{nm} <250 | 3A | 0.30A |
| I _{nm} >400 | 6A | 0.40A |

Auxiliary contacts and their combination

| | |
|-----------------------------------|--|
| when the breaker is switching off | |
| | |
| when the breaker is switching on | |
| | |

Alarm contacts

Alarm contacts and their combination

| Alarm contacts U _e =220V, I _{th} =3A | |
|--|--|
| when the breaker is “switching on” or “switching off” | |
| when the breaker is “tripping free” | |

Shunt release

Generally installed in the circuit breaker A phase, at the rated control power voltage between 70% and 110% , the shunt release shall reliably release the circuit breaker under all operating conditions.

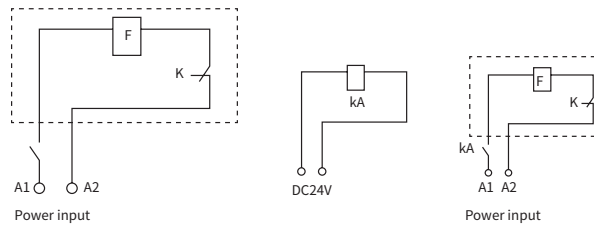
Control voltage: Conventional DC24V 110V 220V 400V; Ultra low voltage type DC1.5V

Note: When the control circuit power supply is DC24V, it is recommended to use the shunt control circuit design in the figure below.

KA: Is the DC24V intermediate relay, the contact current capacity is 1A.

K: The micro switch inside the shunt release series connected with the coil is normally close contact. When the circuit breaker was switch off, the contact will disconnect itself. When the circuit breaker is switch on, the contact will closing itself.

Shunt release wiring diagram

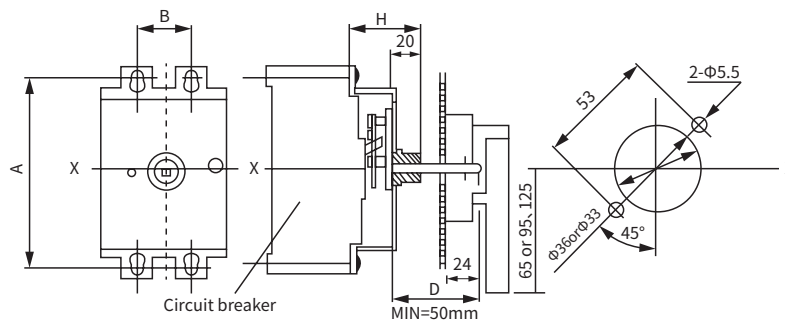


Installation method and appearance size of external accessories

Rotary operating handle mechanism type and specification

| Model | Installation size | | | | Distance from operating handle to the center of circuit breaker |
|--------------|-------------------|----|----|--------|---|
| | A | B | H | D | |
| CZ2-320/EKM6 | 157 | 35 | 55 | 50-150 | 0 |
| CZ2-400/EKM6 | 224 | 48 | 78 | 50-150 | ±5 |

Installation opening holes schematic diagram of CS1-A type handle

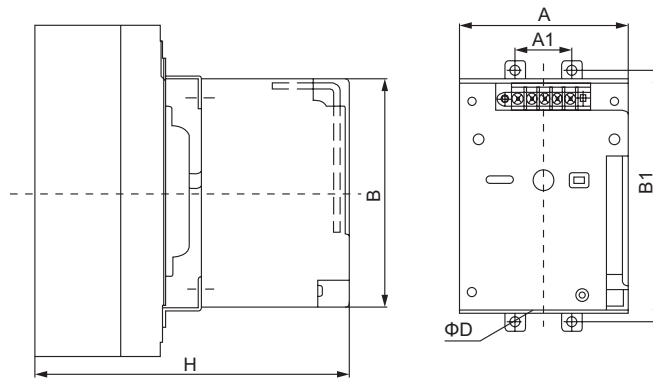


Installation method and appearance size of external accessories

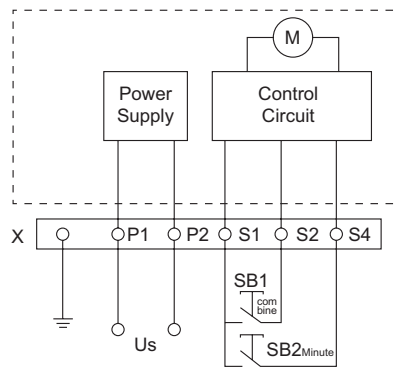
Electric operating mechanism model specification

| Model | H | B | B1 | A | A1 | D |
|----------|-------|-----|-----|-----|----|-----|
| EKM6-320 | 188.5 | 116 | 126 | 90 | 35 | 4.2 |
| EKM6-400 | 244 | 176 | 194 | 130 | 48 | 6.5 |

CD2 Outline and installation size diagram



Wiring diagram of electric operating mechanism



Symbol description:

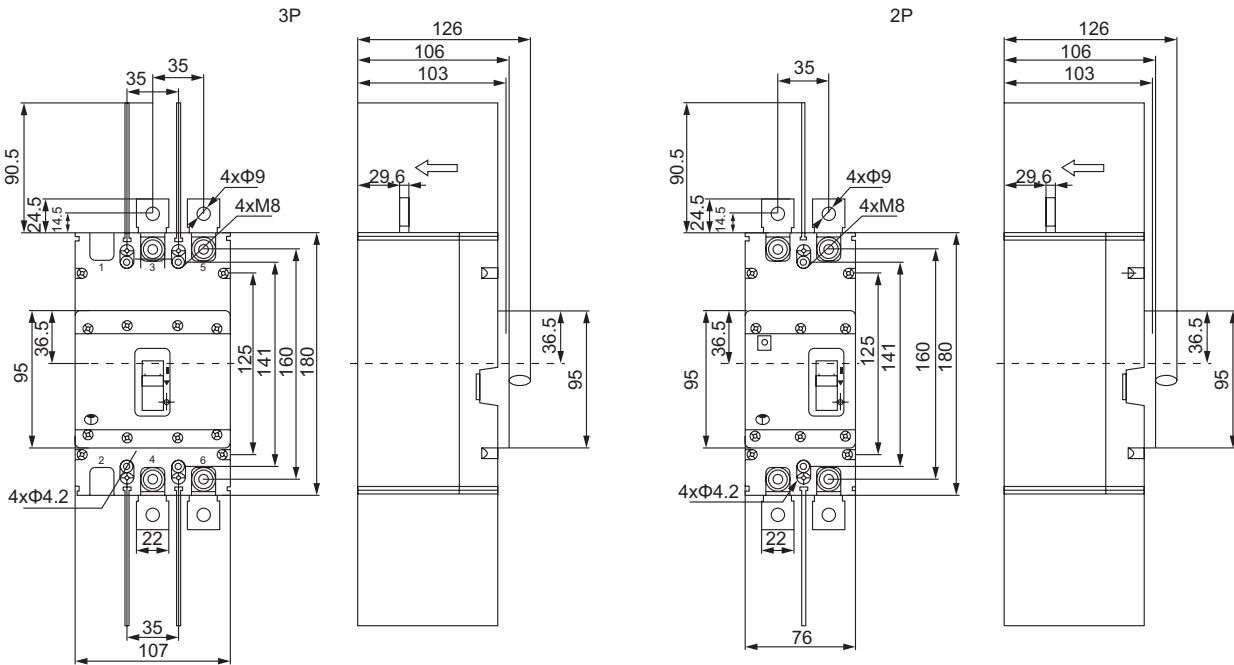
SB1,SB2 Operation button (User Self-prepare)

X Terminal block

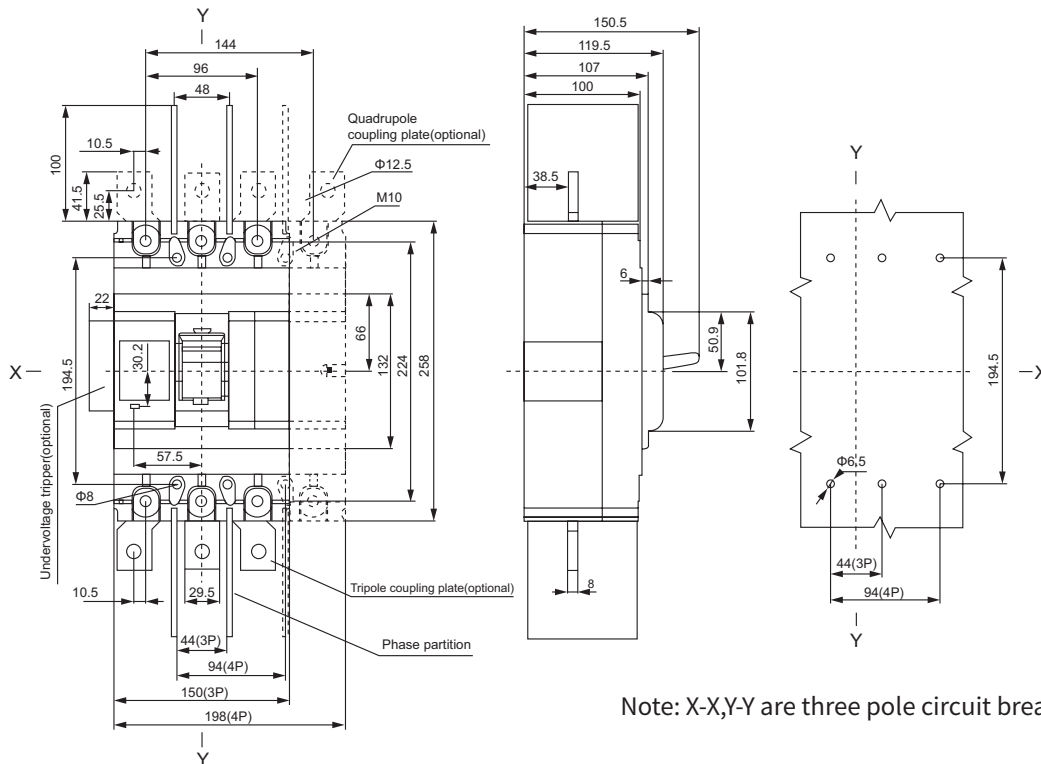
P1,P2 are external power supplies

Overall and installation dimension(mm)

EKM6DC-250/320 overall and installation hole dimension



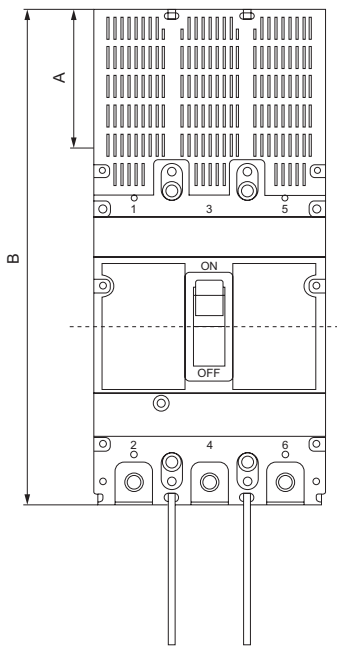
EKM6DC-400 overall and installation hole dimension



Note: X-X,Y-Y are three pole circuit breaker centers

Overall and installation dimension(mm)

EKM6DC MCCB installation diagram with arc cover



| Circuit breaker | Arc cover length A | Total length B |
|-----------------|--------------------|----------------|
| EKM6-250 | 69 | 234 |
| EKM6-400 | 72 | 330 |

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