

# ETEK®

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## INDUSTRIAL POWER DISTRIBUTION ELECTRIC

» *Always for your safety*



ZHEJIANG ETEK  
ELECTRICAL TECHNOLOGY CO.,LTD.

# MAIN PRODUCTS



ZHEJIANG ETEK  
ELECTRICAL TECHNOLOGY CO.,LTD.

# COMPANY

## >>> INTRODUCTION



Zhejiang ETEK Electrical Technology Co.,Ltd. was founded on January of 2011, which has more than 200 employees now. It is a professional manufacturing company engaging in R & D, production and sale of high and low voltage electrical products, such as Terminal distribution electrical appliances, Industrial distribution electrical appliances, Industrial control electrical appliances, DC systems distribution appliances, etc. It possesses three major manufacturing departments and one import & export trading company. The three manufacturing departments are Terminal distribution electrical appliances manufacturing department, Industrial distribution electrical appliances manufacturing department and Industrial control electrical appliances manufacturing department.

The series of products manufactured by the company are mainly sold to international market. All the products produced are in strictly accordance with international IEC/EN standards and China's GB standards. Most of these product have gained TUV and Intertek issued CCC,CE,TUV,SEMKO,EAC,SAA, INMETRO,ISO9001-2008 certificates and CB test reports. The products are sold to more than 50 countries and regions throughout the world, such as UK, France, Australia, Russia, Ukraine, Turkey, Brazil and so on. The quality of the products has been widely praised by the majority of users.

**RoHS**

**EAC**



**CB**



**CE**



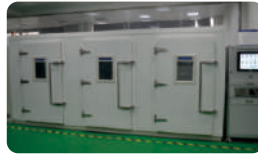
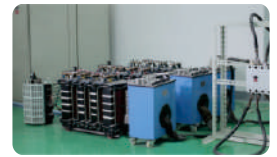
## WORKSHOPS



## MAIN PRODUCTS CLASSIFICATION CHART

Manufacturing department of ETEK Electric	Terminal Power Distribution	MCB	
		RCCB & RCBO	
		Isolation Switch	
		Accessories of Breakers	
		Modular Contactor	
		Modular Indicator & Socket	
		Other Modular Products	
	Industrial Power Distribution	MCCB	
		ACB	
		MPCB	
		ATS	
		Isolator	
	Industrial Control	Contactor	
		Thermal Relay	
		Electromagnetic Starter	
		Push Button Switch	
		LED Indicator & Voltage Meter	

# LOW-VOLTAGE ELECTRICAL TESTING CENTER



## Test Capabilities List

### I. Electromagnetic compatibility laboratory

1. Lightning surge immunity test
2. Pulse immunity test of electric fast transient group
3. Electrostatic Discharge immunity test
4. Power frequency magnetic field resistance test
5. Verify the performance
6. Residual current tripping test
7. 2-stage power frequency withstand voltage test
8. Impulse withstand voltage test, leakage current test of RCBO under the condition of surge current generated by impulse voltage

### II. Mechanical life laboratory

1. Mechanical life test of Mini Circuit Breaker
2. Mechanical life test of Moulded Case Circuit Breaker
3. Mechanical life test of AC Contactor
4. Small reclosing electrical life test of Electrical Meter External Circuit Breaker

### III. High current characteristic laboratory

1. Temperature rise test of Circuit Breaker
2. Characteristics test of Circuit Breaker
3. Reliability test of Intelligent Circuit Breaker Test of Circuit Breaker
4. Product packaging simulation transport vibration

### IV. Material property laboratory

1. Thermal bimetallic deflection measurement test
2. Automatic High Voltage continuous film test of enamelled Wire
3. Thermal softening breakdown test of enamelled wire
4. Enamelled wire stripping test
5. Simply supported beam impact test
6. Loop resistance test
7. Intelligent low resistance test

### V. Insulating material laboratory

1. Thermal and Ignition Resistance test of Insulation Materials
2. Horizontal vertical combustion
3. Insulating materials-determination of the relative leakage mark index
4. Salt spray corrosion resistance test
5. 5-stage power frequency voltage resistance test

### VI. Environmental test chamber

1. High and low temperature hygrothermal test
2. Circuit board aging test
3. Constant temperature test
4. Action characteristics test of AC Contacto
5. Measuring instruments

### VII. Comprehensive characteristic laboratory

1. Temperature rise, reliability test of circuit breaker
2. Small reclosing characteristic test
3. Js7 delay characteristics testing
4. Overloading characteristics test of circuit breaker
5. Temperature rise test of CAC Contactor



## International Team



## Main Exhibition

HANNOVER MESSE	Hannover
MEE	Dubai
FIEE	Sao Paulo
CANTON FAIR	Guangzhou



## Product Overview

EKM8, EKM8T, EKM8L, EKM8E and EKM8EL series of circuit breakers are new upgraded circuit breakers researched and developed by the company combined with the advantages of similar international products and demand of domestic and international markets.

With insulation voltage up to 1000V, the circuit breaker is applicable for distribution systems of AC50Hz, rated working voltage 690V and rated working current from 10A to 800A, used to distribute electric power energy, protect circuits and power equipment against overload, short circuit, undervoltage and so on, also can be used for infrequent startup of motor and protect it from overload, short circuit or undervoltage.

It is featured with small size, high breaking, short flashover, etc., is the ideal product for users. It can be vertically installed or horizontally installed.

EKM8DC series DC moulded-case circuit breaker (hereinafter referred to as circuit breaker) is suitable for DC systems of rated voltage up to and including DC 1000V and rated current 10~800A, used to distribute electric power energy, protect circuits and power equipment against overload, short circuit and so on.

The products can be fed with wires from top and bottom, and it is polarity-free.

It complies with the standards IEC60947-2, GB14048.2, etc.

## Product Features

### Feature 1: Current limiting capacity

Current-limiting refers to limit of the increase of short-circuit current in the loop, and in the loop protected by EKM8, peak value of the short-circuit current and the  $I^2t$  energy in the circuit will be much smaller than the prospective value.

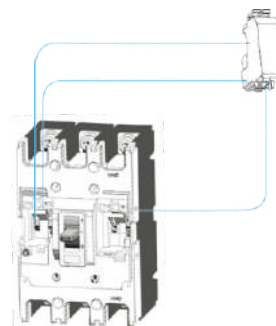
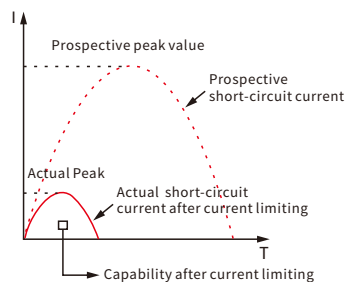
### U-shaped static contact

Unique U-shaped static contact can achieve pre-breaking technology:

The so-called pre-breaking technology refers to when short-circuit current flows through the contact system, electric power generated by U-shaped static contact and moving contact is mutual exclusive. The greater the short-circuit current is, the greater the repulsion of the electromotive force, and it is generated together with the short-circuit current at the same time. Before the trip action occurs, the electrodynamic repulsion force can make the static and moving contact separation, by increasing the arc to increase the equivalent resistance between them to achieve the purpose of suppressing increase of short-circuit current.

### Feature 2: Modularized accessories

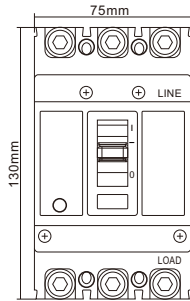
- Accessory: For the circuit breakers of the same frame, they has uniform sizes regardless of the breaking capacity and rated current
- Accessory: Users can freely choose and expand functions of circuit breakers according to their needs
- Modularized accessories have insulation function, which is easy for hot-line operation and installation



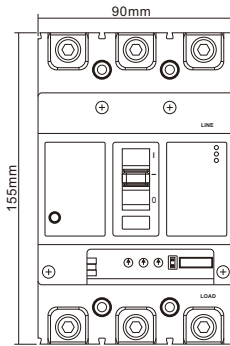
## Product Features

### Feature 3: Miniaturized frame

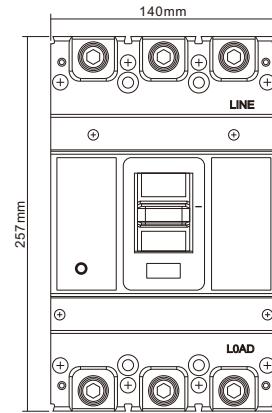
5 frame sizes: 125 type, 160 type, 250 type, 630 type, 800 type  
 Rated current of EKM8 series 10A~800A



125 frame reduces to the same size as the original 63 frame (the width is only 75mm)



160 frame reduces to the same size as the original 100 frame (the width is only 90mm)



630 frame reduces to the same size of the original 400 frame (the width is only 140mm)

### Feature 4: Contact repulsion device (patented technology)

The technical scheme adopted by the invention is:

As shown in Figure 1, the new contact device is mainly consisted of static contact, moving contact, shaft 1, shaft 2, shaft 3 and springs;

When the circuit breaker is in the closed state, shaft 2 acts on the right side of the spring angle; When the circuit breaker has a large fault current, the moving contact will be subjected to the electric repulsion generated by the current itself, and rotate with the center of shaft 1, when shaft 2 rotates to the top of the spring angle with the moving contact, it makes moving contact to rapidly rotate upwards and quickly break the circuit upon the reaction of spring, it has enhanced the breaking capacity of the product through optimization of the contact structure.

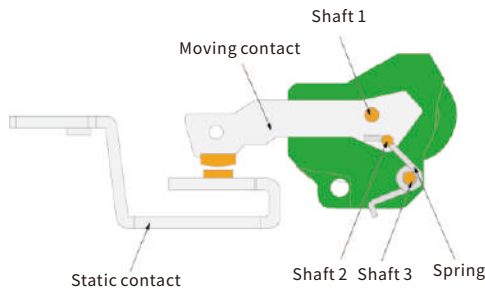


Fig.1

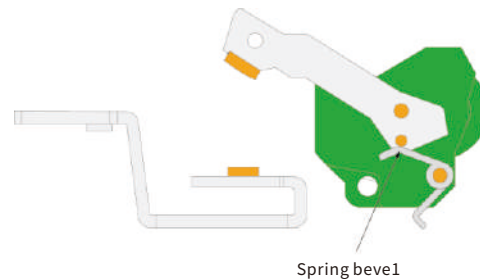


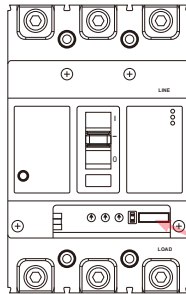
Fig.2 : Status when breaking



## Product Features

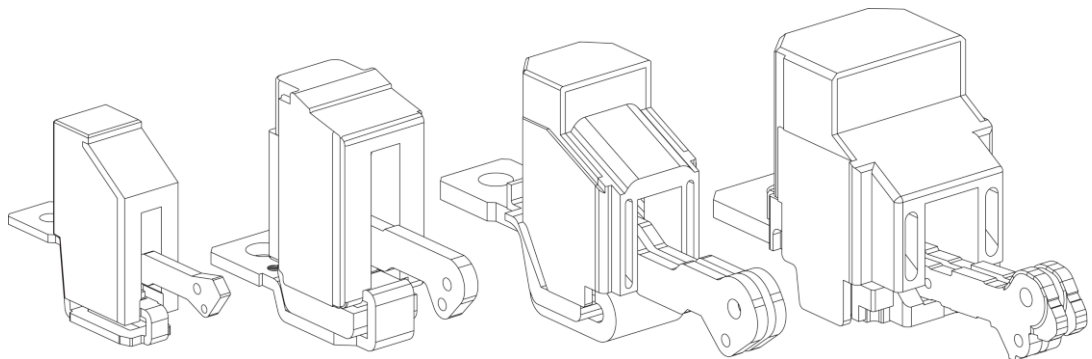
### Feature 5: Intelligence

Network communication is more convenient. It accesses to Modbus communication system through dedicated connection. EKM8E / EKM8EL with communication function can select monitoring accessories to realize door display, read, set and control.



Built-in communication, need not external module

### Feature 6: Modularized arc extinguishing system



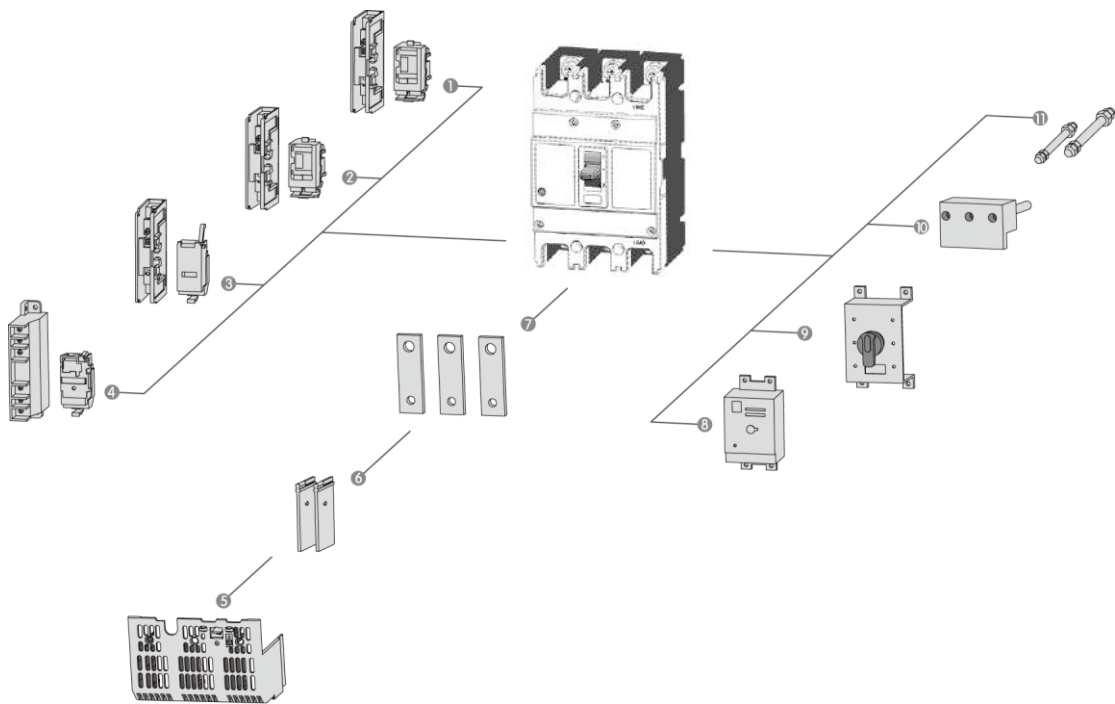
### Feature 7: Unification

The six series of EKM8、EKM8T、EKM8E、EKM8DC、EKM8L and EKM8EL under the same frame size have the same dimensions, installation dimensions and appearance style, which is completely unified design.

## Ambient and Installation Conditions

- Altitude up to 2000m;
- Ambient medium temperature should be within -10°C to +55°C;
- It can withstand the effect of damp air;
- It can withstand the effect of moulds;
- It can withstand the effect of nuclear radiation;
- The max inclination is 22.5°C.
- It still can work reliably when the ship subjects to normal vibration;
- It can still work reliably if the product subjects to the earthquake (4g).
- Places where the surrounding medium is free from explosion danger, and far away from gas or conductive dust that would erode the metal or destroy the insulation;
- Keep away from rain or snow.

## Components of Circuit Breaker



- 1: Auxiliary switch
- 2: Alarm switch
- 3: Shunt release
- 4: Undervoltage release

- 5: Terminal cap
- 6: Phase partition
- 7: Front-board wiring
- 8: Electric operation

- 9: Manual operation
- 10: Plug-in type back-board wiring
- 11: Back-board wiring

## Product Selection Guide

EKM8 - 125 S P / 4 300 - 125A 2 A Q1 D1 Q 2



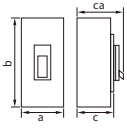
EKM8	125	S			P	4	
↓	↓	↓			↓	↓	
Product code	Frame size	Current class			Code of control circuit source voltage	Pole number	
Moulded-case circuit breaker	125 160 250 400 630 1250		C	S	H	P: electric operation Z: rotary handle W: direct operation	3: 3-pole 4: 4-pole
	Note: 125 is upgraded type of 63 frame 160 is upgraded type of 100 frame 250 is upgraded type of 225 frame 630 is upgraded type of 400 frame 1250 is upgraded type of 800 frame	125	15/10	18/15	25/18		
		160	20/15	25/18	35/25		
		250	20/15	25/18	35/25		
		400		35/25	50/35		
		630		35/25	50/35		
		1250		50/35	65/50		

300	125A	2	A
↓	↓	↓	↓
Release type and internal accessory	Rated current (A)	Application	Code of four-pole product
The first digit represents release type 2: Has instantaneous release only 3: Complex release Note: Later two digits are the code of accessories (see accessory table)	125 10, 16, 20, 25, 32, 40, 50 63, 80, 100, 125 160 63, 80, 100, 125, 140, 160 250 100, 125, 140, 160 180, 200, 225, 250 400 250, 300, 315, 350, 400 630 400, 500, 630 1250 500, 630, 700, 800, 1000, 1250	1: power distribution 2: motor protection	A: N-pole without protection cannot close or open B: N-pole without protection can close and open C: N-pole with protection can close and open D: N-pole with protection cannot close or open



Q1			D1		Q	2
↓			↓		↓	↓
Accessory voltage			Electric operation voltage		Installation methods	Install wiring board or not
Undervoltage release	Shunt release	Auxiliary alarm	DC1 Electric Operation	DC3 Electric Operation	Q: Front-board H: Back-board C: Plug-in type	1: No 2: Yes
Q1: AC220V	F1: AC220V	J1: AC125V	D1: AC220V	D5: AC230V		
Q2: AC240V	F2: AC380V	J2: AC250V	D2: AC230V	D6: AC110V		
Q3: AC380V	F3: DC110V	J3: DC125V	D3: AC380V	D7: DC220		
Q4: AC415V	F4: DC24V	J4: DC24V	D4: AC400V	D8: DC110		
				D9: AC110-240V D10: DC100-220V		
			Note: Adaptable voltages for two electric operations. Please refer to the introduction of external accessory.			

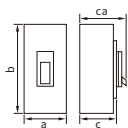


## Main Performance Indexes

Frame current (A)		125			160			
Model		EKM8-125C	EKM8-125S	EKM8-125H	EKM8-160C	EKM8-160S	EKM8-160H	
Pole number		1, 2, 3, 4			2, 3, 4			
								
Rated current (A)		10, 16, 20, 32, 25, 40, 50, 63, 80, 100, 125			63, 80, 100, 125, 140, 160			
Rated voltage (V)		AC400V			AC400V			
Rated insulation voltage (V)		AC1000V			AC1000V			
Short-circuit breaking capacity(KA)Icu/Ics		AC400V	15/10	18/15	25/18	20/15	25/18	35/25
Operating cycle number		Electrical life	6000			3000		
		Mechanical life	9000			7000		
Outline dim(mm) a-b-c-ca		1P	25-130-68-90			-		-
		2P	50-130-68-90			60-155-68-90		60-155-88-115
		3P	75-130-68-90			90-155-68-90		90-155-88-115
		4P	100-130-68-90			120-155-68-90		120-155-88-115
		Weight (kg)	1P	0.32	-	-	-	-
		2P	0.5	0.55	1.0	1.1		
		3P	0.55	0.65	1.1	1.2		
		4P	0.65	0.8	1.4	1.5		
Electric operating device (MD)					●			
External driving operating handle					●			
Automatic release		Thermal electromagnetic type						

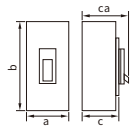
## Main Performance Indexes

Frame current (A)		250			400	
Model		EKM8-250C	EKM8-250S	EKM8-250H	EKM8-400S	EKM8-400H
Pole number		3, 4			3, 4	
						
Rated current (A)		100, 125, 140, 160, 180, 200, 225, 250			250, 315, 350, 400	
Rated voltage (V)		AC400V			AC400V	
Rated insulation voltage (V)		AC1000V			AC1000V	
Short-circuit breaking capacity(KA)Icu/Ics	AC400V	20/15	25/18	35/25	35/25	50/35
Operating cycle number	Electrical life	3000			2000	
	Mechanical life	7000			4000	
Outline dim(mm) a-b-c-ca						
	3P	105-165-68-92		105-165-88-115	140-257-103-155	
	4P	140-165-68-92		140-165-88-115	184-257-103-155	
Weight (kg)	3P	1.5		1.7	5.5	
	4P	1.9		2.1	7.0	
Electric operating device (MD)					●	
External driving operating handle					●	
Automatic release		Thermal electromagnetic type				



## Main Performance Indexes

Frame current (A)		630		1250	
Model		EKM8-630S	EKM8-630H	EKM8-1250S	EKM8-1250H
Pole number		3, 4		3, 4	
Rated current (A)		250, 315, 350, 400, 500, 630		500, 630, 700, 800, 1000, 1250	
Rated voltage (V)		AC400V		AC400V	
Rated insulation voltage (V)		AC1000V		AC1000V	
Short-circuit breaking capacity(KA)Icu/Ics	AC400V	35/25	50/35	50/35	65/50
Operating cycle number	Electrical life	2000		1500	
	Mechanical life	4000		4000	
Outline dim(mm) a-b-c-ca					
	3P	140-257-103-155		210-275-103-155	
	4P	184-257-103-155		280-275-103-155	
Weight (kg)	3P	5.7		9.5	
	4P	7.5		12.5	
Electric operating device (MD)		●			
External driving operating handle		●			
Automatic release		Thermal electromagnetic type			





## Product Selection Guide

EKM8 T - 160 H Z / 3 300 2 A Q1 Q 2



EKM8	T	160	H			
↓	↓	↓	↓			
Product code	Adjustable type	Code of frame size current	Breaking capacity ICU/ICS(kA)			
Moulded-case circuit breaker (MCCB)	T: thermomagnetic adjustable T/A: single adjustable (i.e. thermal adjustable \magnetic fixed)	125, 160, 250, 400, 630, 1250 Note: 160 is upgraded type of 100 frame 225 is upgraded type of 250 frame 630 is upgraded type of 400 frame	S	H		
			160	25/18	35/25	
			250	25/18	35/25	
			400	35/25	50/35	
			630	35/25	50/35	
			1250	50/35	65/50	
H-high performance 70KA						

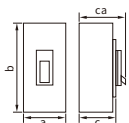
Z	3	300	160		
↓	↓	↓	↓		
Code of operating mode	Pole number	Code of release type and internal accessory	Rated current (A)		
P: electric operation Z: rotary handle W: direct operation ①Electric operation DC1,DC2, DC3	3: 3-pole 4: 4-pole	The first digit represents release type 2: Has instantaneous release only 3: Complex release Note: Later two digits are the code of accessories (see accessory table 1)	160	20-25,25-32,32-40,40-50,50-63,63-80 80-100,100-125,125-160	160-200,200-250
			250	100-125,125-160,160-200,200-250	
			400	200-250,250-320,320-400	
			630	400-500,500-630	
			1250	630-800,800-1000,1000-1250	

2	A		
↓	↓		
Application	Code of four-pole product		
1: power distribution 2: motor protection	A: N-pole without protection, cannot close or open B: N-pole without protection, can close and open C: N-pole with protection, can close and open D: N-pole with protection, cannot close or open		




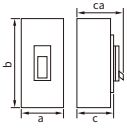
Q1			D1		Q	2
↓			↓		↓	↓
Accessory voltage			Electric operation voltage		Installation methods	Install wiring board or not
Undervoltage release	Shunt release	Auxiliary alarm	DC1 Electric Operation	DC3 Electric Operation	Q: Front-board H: Back-board C: Plug-in type	1: No 2: Yes
Q1: AC220V	F1: AC220V	J1: AC125V	D1: AC220V	D5: AC230V		
Q2: AC240V	F2: AC380V	J2: AC250V	D2: AC230V	D6: AC110V		
Q3: AC380V	F3: DC110V	J3: DC125V	D3: AC380V	D7: DC220		
Q4: AC415V	F4: DC24V	J4: DC24V	D4: AC400V	D8: DC110		
				D9: AC110-240V D10: DC100-220V		
			Note: Adaptable voltages for two electric operations. Please refer to the introduction of external accessory.			

## Main Performance Indexes

Frame current (A)		160		250	
Model		EKM8T-160S	EKM8T-160H	EKM8T-250S	EKM8T-250H
Pole number		3, 4		3, 4	
					
Rated current (A)		20-25, 25-32, 32-40, 40-50, 50-63, 63-80, 80-100, 100-125A, 125-160A		100-125, 125-160, 160-200, 200-250A	
Rated voltage (V)		AC400V		AC400V	
Rated insulation voltage (V)		AC1000V		AC1000V	
Short-circuit breaking capacity(KA)Icu/Ics	AC400V	25/18	35/25	25/18	35/25
Operating cycle number	Electrical life	3000		3000	
	Mechanical life	7000		7000	
Outline dim(mm) a-b-c-ca					
	3P	90-155-68-90	90-155-88-115	105-165-68-92	105-165-88-115
	4P	120-155-68-90	120-155-88-115	140-165-68-92	140-165-88-115
Weight (kg)	3P	1.0	1.1	1.5	1.7
	4P	1.1	1.7	1.9	2.1
Electric operating device (MD)		●			
External driving operating handle		●			
Automatic release		Thermal electromagnetic type			



## Main Performance Indexes

Frame current (A)		400		630		1250	
Model		EKM8T-400S	EKM8T-400H	EKM8T-630S	EKM8T-630H	EKM8T-1250S	EKM8T-1250H
Pole number		3, 4		3, 4		3, 4	
							
Rated current (A)		200-250, 250-320, 320-400		400-500, 500-630		630-800, 800-1250	
Rated voltage (V)		AC400V		AC400V		AC400V	
Rated insulation voltage (V)		AC1000V		AC1000V		AC1000V	
Short-circuit breaking capacity(KA)Icu/Ics	AC400V	35/25	50/35	35/25	50/35	50/35	65/50
Operating cycle number	Electrical life	2000		2000		1500	
	Mechanical life	4000		4000		4000	
Outline dim(mm) a-b-c-ca							
		3P	140-257-103-155	140-257-103-155	140-257-103-155	210-275-103-155	210-275-103-155
		4P	185-257-103-155	185-257-103-155	185-257-103-155	280-275-103-155	280-275-103-155
Weight (kg)	3P	5.5		5.7		9.5	
	4P	7.0		7.5		12.5	
Electric operating device (MD)				●			
External driving operating handle				●			
Automatic release		Thermal electromagnetic type					






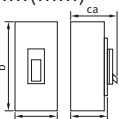
## Product Selection Guide

EKM8DC - 125 H 4300 / DC1000V / 80A / P / B



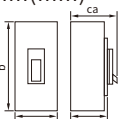
EKM8DC	125	H	2	2
↓	↓	↓	↓	↓
Product code	Frame size rated current	Rated ultimate short-circuit breaking capacity	Pole number	Release type
DC circuit breaker	125, 160, 250, 400, 800	H :higher level type	2:2-pole 3:3-pole 4:4-pole	2-short-circuit release 3-complex release

EKM8DC	125	H	2
↓	↓	↓	↓
Accessory	Rated operating voltage	External accessory	Wiring method
0: No 2: Auxiliary contact 3: Complex release	DC 500V-1000V	Null: body operation P: electric operation GZ3: rotary handle	Null: front-board wiring B: back-board wiring C: plug-in type

### Main Performance Indexes

Frame current (A)		125	160	250
Model		EKM8DC-125H	EKM8DC-160H	EKM8DC-250H
Pole number		2,3, 4	2,3, 4	2,3, 4
				
Rated current (A)		10,16, 20, 25, 32, 40, 50 63, 80, 100, 125	10, 16, 20, 25, 32, 40, 50 63,80, 100, 125, 140, 160	100,125,140,160 180, 200, 225, 250
Rated voltage (V)		DC250V, DC500V DC750V, DC1000V	DC250V, DC500V DC750V, DC1000V	DC250V, DC500V DC750V, DC1000V
Rated insulation voltage (V)		DC1000V	DC1000V	DC1000V
Short-circuit breaking capacity(KA) Icu(Ics=70%Icu)		250VDC(35KA),500VDC(25KA) DC750V(15KA),DC1000V(10KA)	250VDC(35KA),500VDC(25KA) DC750V(15KA),DC1000V(10KA)	250VDC(35KA),500VDC(25KA) DC750V(15KA),DC1000V(10KA)
Operating cycle number	Electrical life	6000	3000	3000
	Mechanical life	9000	7000	7000
Outline dim(mm) a-b-c-ca 	2P	50-130-68-90	60-155-88-115	-
	3P	75-130-68-90	90-155-88-115	105-165-88-115
	4P	100-130-68-90	120-155-88-115	140-165-88-115
Weight (kg)	2P	0.55	1.0	-
	3P	0.65	1.1	1.5
	4P	0.8	1.4	1.9
Electric operating device (MD)			●	
External driving operating handle			●	
Automatic release		Thermal electromagnetic type		

### Main Performance Indexes

Frame current (A)		400	800
Model		EKM8DC-400M	EKM8DC-800H
Pole number		2,3,4	2,3,4
			
Rated current (A)		250,315, 350, 400, 630	500, 630, 700, 800
Rated voltage (V)		DC250V, DC500V DC750V, DC1000V	DC250V, DC500V DC750V, DC1000V
Rated insulation voltage (V)		DC1000V	DC1000V
Short-circuit breaking capacity(KA) Icu(Ics=70%Icu)		250VDC(35KA),500VDC(25KA) DC750V(15KA),DC1000V(10KA)	250VDC(35KA),500VDC(25KA) DC750V(15KA),DC1000V(10KA)
Operating cycle number	Electrical life	2000	1500
	Mechanical life	4000	4000
Outline dim(mm) a-b-c-ca 	2P	140-257-103-155	210-275-103-155
	3P	140-257-103-155	210-275-103-155
	4P	184-257-103-155	280-275-103-155
Weight (kg)	2P	5.0	9.5
	3P	5.7	12.5
	4P	7.5	1.4
Electric operating device (MD)			●
External driving operating handle			●
Automatic release		Thermal electromagnetic type	

**DC System Protection**

System type		Grounding system		Ungrounded system
Various types of reformation		One pole of DC power is grounded	Neutral point of DC power is grounded	
	Fault A	Max. Isc that only to the positive pole	Isc is close to max. Isc and only to the positive pole, voltage is U/2	No effect
Fault effect	Fault B	Max. Isc that includes two poles	Max. Isc that includes two poles	Max. Isc that includes two poles
	Fault C	No effect	Same as fault A but only to the negative pole	No effect
The most serious situation		Fault A	Faults A and C	Fault B
Pole breaking		It can be connected at the positive in series, and commonly execute the breaking	At each pole, they must be at U/2	The two poles to be disconnected are evenly distributed between the two electrodes

**Wiring Method**

Un < 250V				
Un < 800V				
Un < 1000V				

**Product Selection Guide**

EKM8L - 160 S P / 4 300 - 160A 2 A L1 Y1 Q1 D1 Q 2

EKM8L	160	S	P	4			
↓	↓	↓	↓	↓			
Product code	Frame size	Current class			Code of control circuit source voltage	Pole number	
Residual-current circuit breaker	125, 160, 250, 630, 800 Note: 125 is upgraded type of 63 frame 160 is upgraded type of 100 frame 225 is upgraded type of 250 frame		S	M	H	P: electric operation Z: rotary handle W: direct operation	3: 3-pole 4: 4-pole
		125	25/18	-	35/25		
		160	25/18	35/25	50/35		
		250	25/18	35/25	50/35		
		400	35/25	-	65/65		
800	-	-	65/65				



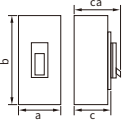
300	160A	2	A
↓	↓	↓	↓
Release type and internal accessory	Rated current (A)	Application	Code of four-pole product
The first digit represents release type 2: has instantaneous release only 3: complex release Note: Later two digits are the code of accessories (see accessory table)	125 10, 16, 20, 25, 32, 40 50, 63, 80, 100, 125	1: power distribution 2: motor protection	A: N-pole without protection cannot close or open B: N-pole without protection can close and open C: N-pole with protection can close and open D: N-pole with protection cannot close or open Note: Unless otherwise mentioned, 4-pole products will be classified as CAT. B by default.
	160 63, 80, 100, 125, 140 160		
	250 100, 125, 140, 160 180, 200, 225, 250		
	400 250, 300, 315, 350 400		
	800 500, 630, 700, 800		

L1			Y1			
↓			↓			
Rated residual operating current (mA)			Rated delay time (if selected)			
Delay fixed type		Quick three-gear adjustable	Delay fixity			Delay three-gear adjustable
L1: 30 L2: 50 L3: 75 L4: 100 L5: 150	L7: 200 L8: 300 L9: 500 L10: 1000	L11: 30, 50, 100 L12: 30, 100, 200 L13: 30, 100, 500 L14: 100, 200, 300 L15: 100, 300, 500 L16: 300, 500, 1000	Y1: 0.1s Y2: 0.2s Y3: 0.3s	Y4: 0.4s Y5: 0.5s Y6: 0.6s	Y7: 0.7s Y8: 0.8s Y9: 0.9s	Y10: 1.0s Y11: 1.5s Y12: 2.0s
			Y13: 0.45, 1, 2 Y14: 1, 2, 3(s)			


Q1			D1		Q	2
↓			↓		↓	↓
Accessory voltage			Electric operation voltage		Installation methods	Install wiring board or not
Undervoltage release	Shunt release	Auxiliary alarm	DC1 Electric Operation	DC3 Electric Operation	Q: Front-board H: Back-board C: Plug-in type	1: No 2: Yes
Q1: AC220V	F1: AC220V	J1: AC125V	D1: AC220V	D5: AC230V		
Q2: AC240V	F2: AC380V	J2: AC250V	D2: AC230V	D6: AC110V		
Q3: AC380V	F3: DC110V	J3: DC125V	D3: AC380V	D7: DC220		
Q4: AC415V	F4: DC24V	J4: DC24V	D4: AC400V	D8: DC110		
			D9: AC110-240V D10: DC100-220V			
			Note: Adaptable voltages for two electric operations. Please refer to the introduction of external accessory.			

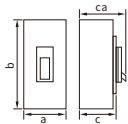




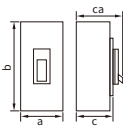
## Main Performance Indexes

Frame current (A)		125			160			
Model		EKM8L-125S	EKM8L-125H	EKM8L-160S	EKM8L-160M	EKM8L-160H		
Pole number		2,3, 4		2,3, 4	3, 4			
								
Power supply system	3P	3Φ3W, 1Φ2W, 1Φ3W			3Φ3W, 1Φ2W, 1Φ3W			
	4P	3Φ4W			3Φ4W			
Rated current (A)		10, 16, 20, 25, 32, 40 50, 63, 80, 100, 125			63, 80, 100, 125, 140, 160			
Rated voltage (V)		AC400V						
Rated insulation voltage (V)		AC690V						
Leakage indication system		Button						
Short-circuit breaking capacity(KA)Icu/Ics		AC400V	25/18	35/25	25/18	35/25	50/35	
Operating cycle number	Electrical life	6000		6000	3000			
	Mechanical life	9000		9000	7000			
Quick type	Rated residual operating current	30, 100, 500(adjustable)						
	Max. actuation time	0.1						
Delay type	Rated residual operating current	100, 300, 500(adjustable)						
	Max. actuation time	-						
	Max. actuation time under 21Δn (s)	0.45, 1.0, 2.0(adjustable)						
	Inertia non-actuation time under 21Δn (s)	0.1, 0.5, 1.0						
Outline dim(mm) a-b-c-ca		2P	50-130-68-90			60-155-68-90		
		3P	75-130-68-90			90-155-68-90		90-155-88-115
		4P	100-130-68-90			120-155-68-90		120-155-88-115
Weight (kg)	2P	0.55		0.75	0.75	0.75		
	3P	0.65		0.85	1.2	1.2		
	4P	0.8		1.2	1.5	1.5		
Electric operating device (MD)		●						
External driving operating handle		●						
Automatic release		Thermal electromagnetic type						

**Main Performance Indexes**

Frame current (A)	250			
Model	EKM8L-250S	EKM8L-250M	EKM8L-250H	
Pole number	3, 4			
				
Power supply system	3P	3Φ3W, 1Φ2W, 1Φ3W		
	4P	3Φ4W		
Rated current (A)	100, 125, 140, 160, 180, 200, 225, 250			
Rated voltage (V)	AC400V			
Rated insulation voltage (V)	AC690V			
Leakage indication system	Button			
Short-circuit breaking capacity(KA)Icu/Ics	AC400V	25/18	35/25	50/35
Operating cycle number	Electrical life	3000		
	Mechanical life	7000		
Quick type	Rated residual operating current	30, 100, 500(adjustable)		
	Max. actuation time	0.1		
Delay type	Rated residual operating current	100, 300, 500(adjustable)		
	Max. actuation time	-		
	Max. actuation time under 21Δn (s)	0.45, 1.0, 2.0(adjustable)		
	Inertia non-actuation time under 21Δn (s)	0.1, 0.5, 1.0		
Outline dim(mm) a-b-c-ca	2P	-		
	3P	105-165-68-92	105-165-88-115	
	4P	140-165-68-92	140-165-88-115	
Weight (kg)	2P	-	-	
	3P	2.0	2.1	
	4P	2.5	2.6	
Electric operating device (MD)	●			
External driving operating handle	●			
Automatic release	Thermal electromagnetic type			



Main Performance Indexes				
Frame current (A)		400		800
Model		EKM8L-400S	EKM8L-400H	EKM8L-800H
Pole number		3, 4		3, 4
				
Power supply system	3P	3Φ3W, 1Φ2W, 1Φ3W		3Φ3W, 1Φ2W, 1Φ3W
	4P	3Φ4W		3Φ4W
Rated current (A)		250,315,350,400		500,630,700,800
Rated voltage (V)		AC400V		AC400V
Rated insulation voltage (V)		AC690V		AC690V
Leakage indication system		Button		Button
Short-circuit breaking capacity(KA)Icu/Ics	AC400V	35/25	65/65	65/65
Operating cycle number	Electrical life	2000		
	Mechanical life	4000		
Quick type	Rated residual operating current	30, 100, 500(adjustable)		
	Max. actuation time	0.1		
Delay type	Rated residual operating current	100, 300, 500(adjustable)		
	Max. actuation time	-		
	Max. actuation time under 21Δn (s)	0.45, 1.0, 2.0(adjustable)		
	Inertia non-actuation time under 21Δn (s)	0.1, 0.5, 1.0		
Outline dim(mm) a-b-c-ca		2P	-	
		3P	140-257-103-155	210-257-103-155
		4P	185-257-103-155	280-257-103-155
Weight (kg)	2P	-		-
	3P	6.6	12.5	
	4P	8.4	17.5	
Electric operating device (MD)		●		
External driving operating handle		●		
Automatic release		Thermal electromagnetic type		

### Product Overview

EKM8E and EKM8EL series electronic circuit breakers are applicable for low-voltage power systems of AC 50Hz, rated operating voltage up to 1000V and rated operating current from 16A to 800A.

#### Ambient and installation conditions

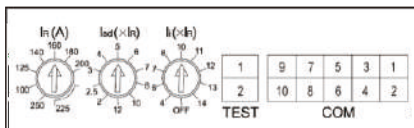
- Altitude up to 2000m;
- Ambient medium temperature should be within -10°C to +55°C ;
- It can withstand the effect of damp air;
- It can withstand the effect of salt fog or oil mist;
- It can withstand the effect of moulds;
- It can withstand the effect of nuclear radiation;
- The max inclination is 22.5°C.
- It still can work reliably when the ship subjects to normal vibration;
- It can still work reliably if the product subjects to the earthquake (4g).
- Places where the surrounding medium is free from explosion danger, and far away from gas or conductive dust that would erode the metal or destroy the insulation;
- Keep away from rain or snow.

### Product Features

- Circuit breaker can be equipped with undervoltage release, shunt release, auxiliary contacts, alarm contacts, electric operating mechanism, rotary operating handle and other accessories.
- Circuit breaker has protection functions of overload long delay, short-circuit short delay and short-circuit instantaneous protection, the user can set the required protection characteristics (user only needs to operate the DIP switch for settings of protection function parameters).
- Circuit breaker has ground fault and thermal analog protection functions, pre-alarm indication over-current indication, load current indication, digital current analysis technology, and it can achieve a higher level of protection.
- EKM8EL series is circuit breaker with residual current protection function.

### Panel and function description

#### Intelligent release panel



#### Tripping test port (TEST):

- 1 Tripping test input DC12V(+)
- 2 Tripping test input DC12V(-)

#### Panel adjustment knob as follows in turn:

- IR(A) Isd(x IR) Ii(x IR)
- IR: Overload long delay tripping setting current; Isd: Short-circuit short delay tripping setting current;
- Ii: Short-circuit instantaneous tripping setting current;

#### The rest parameters are set by factory default, or set by remote communication, as follows:

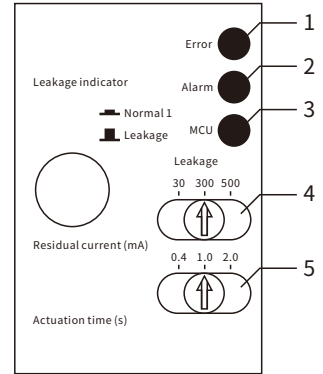
- tR: Overload long delay setting time, factory default: 60s;
- tsd: Short-circuit short delay setting time, factory default: 0.1s;
- Ip: Overload pre-alarm setting current, factory default: 0.85\*IR;

#### Intelligent communication port (COM):

- |                                |  |
|--------------------------------|--|
| 1: Power supply input DC24V(+) | 6: 485B-   |
| 2: Power supply input DC24V(-) | 7: Closing and opening common terminal of electric operating mechanism |
| 3: 485A+                       | 8: Closing and opening common terminal of electric operating mechanism |
| 4: 485A+                       | 9: Opening of electric operating mechanism                             |
| 5: 485B-                       | 10: Closing of electric operating mechanism                            |

**Panel With Residual Current Protection**

- 1: Setting current  $I_n$  overload indicator, the red light will go on when the operation current is  $\geq 105\% I_n$
- 2: Pre-alarm current  $I_p$  indicator, the yellow light starts flashing when operation current is  $\geq I_p \times 90\%$
- 3: When operation current is  $\geq 60\% \times I_n$  setting current, the green light will go on
- 4: The code switch for residual current setting
- 5: The code switch for leakage action time setting



**Product Selection Guide**

EKM8 E - 160 P / 3 400 2 A

EKM8	E	L
↓	↓	↓
Product code	Adjustable type	Rated residual operating current
Moulded-case circuit breaker	E: electronic adjustable	L: residual-current circuit breaker
		Quick fixed type
		30, 50, 100, 30, 100, 200, 30, 100, 500, 100, 200, 300
		100, 300, 500, 300, 500, 1000
		Quick adjustable type
30, 50, 100, 30, 100, 200, 30, 100, 500, 100, 200, 300		
100, 300, 500, 300, 500, 1000		
160	P	3
↓	↓	↓
Code of frame size current	Code of operating mode	Pole number
$I_{nm}=160$ $I_{nm}=250$ $I_{nm}=400$ $I_{nm}=800$	P: electric operation Z: rotary handle W: direct operation ①Electric operation DC1, DC2, DC3	3: 3-pole 4: 4-pole
400	2	A
↓	↓	↓
Code of release type and internal accessory	Code of different applications	Code of four-pole product
2: intelligent release Accessory code, see table 1	1: power distribution 2: motor protection	A: N-pole without protection, cannot close or open B: N-pole without protection, can close and open C: N-pole with protection, can close and open D: N-pole with protection, cannot close or open



## Main Performance Indexes

Frame current (A)		160	250	400	630	1250	
Model		EKM8E-160H	EKM8E-250H	EKM8E-400H	EKM8E-630H	EKM8E-1250H	
Pole number		3, 4	3, 4	3, 4	3, 4	3, 4	
Rated current (A)		12-32, 25-63, 40-100, 63-160	100-250	200-400	200-400 400-630	400-630,500-800, 630-1000,850-1250	
Rated voltage (V)		AC400V					
Rated insulation voltage (V)		AC1000V					
Short-circuit breaking capacity(KA)Icu/Ics	AC400V	35/25	35/25	50/35	50/35	65/50	
Operating cycle number	Electrical life	1500	1000	1000	1000	1000	
	Mechanical life	7000	7000	4000	4000	4000	
Outline dim(mm) a-b-c-ca							
		3P	90-155-88-115	105-165-88-115	140-257-103-155	140-257-103-155	210-257-103-155
		4P	90-155-88-115	140-165-88-115	185-257-103-155	185-257-103-155	280-257-103-155
Weight (kg)	3P	1.8	2.1	5.5	5.7	5.7	
	4P	2.3	2.6	7.0	7.5	7.5	
Electric operating device (MD)		●					
External driving operating handle		●					
Automatic release		Electronic type					

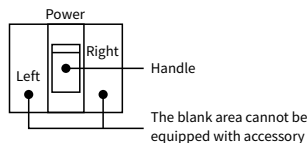
## Main Performance Indexes

Frame current (A)		160	250	400	800	
Model		EKM8EL-160M	EKM8EL-250H	EKM8EL-400H	EKM8EL-800H	
Pole number		3, 4	3, 4	3, 4	3, 4	
Power supply system		3Φ3W, 1Φ2W 1Φ3W	3Φ4W, 3Φ3W 1Φ3W, 1Φ2W 1Φ3W	3Φ3W, 1Φ2W 1Φ3W	3Φ3W, 1Φ2W 1Φ3W, 3Φ4W	
Rated current (A)		16-32, 40-125 80-160	100-250	200-400	300-630 400-800	
Rated voltage (V)		AC440V				
Rated insulation voltage (V)		AC1000V				
Leakage indication system		Button				
Short-circuit breaking capacity(KA)Icu/Ics	AC400V	35/25	50/35	65/50	65/50	
Operating cycle number	Electrical life	1500	1000	1000	1000	
	Mechanical life	7000	7000	4000	4000	
Quick type	Rated residual operating current	100, 300, 500(adjustable)				
	Max. actuation time	0.1				
Delay type	Rated residual operating current	100, 300, 500(adjustable)				
	Max. actuation time under 21Δn (s)	0.45, 1.0, 2.0(adjustable)				
	Inertia non-actuation time under 21Δn (s)	0.1, 0.5, 1.0				
Outline dim(mm) a-b-c-ca		3P	90-155-88-115	105-165-88-115	140-257-103-155	210-257-103-155
		4P	120-155-88-115	140-165-88-115	185-257-103-155	280-257-103-155
Weight (kg)	3P	1.8	2.1	6.6	12.5	
	4P	2.3	2.6	8.4	17.5	
Electric operating device (MD)		●				
External driving operating handle		●				
Automatic release		Electronic type				

Accessory Table

EKM8, EKM8T, EKM8E, EKM8DC, EKM8L and EKM8EL Common

Model	EKM8-125	EKM8-160	EKM8-250	EKM8-400 EKM8-630	EKM8-800
Breaking capacity	S, H	S, M, H	S, M, H	S, M, H	S, H
Pole number	2, 3, 4	2, 3, 4	3, 4	3, 4	3, 4
Accessory code	Accessory name				
208, 308	Alarm switch				
210, 310	Shunt release				
220, 320	Auxiliary switch				
230, 330	Undervoltage release				
240, 340	Shunt release, auxiliary switch				
260, 360	Two groups of auxiliary switch				
270, 370	Auxiliary switch, undervoltage release				
218, 318	Shunt release, alarm switch				
228, 328	Auxiliary switch, alarm switch				
238, 338	Undervoltage release, alarm switch				
248, 348	Shunt release, auxiliary switch, alarm switch				
268, 368	Two groups of auxiliary switch, alarm switch				
278, 378	Auxiliary switch, undervoltage release, alarm switch				
280, 380	Two groups of auxiliary switch, shunt release				



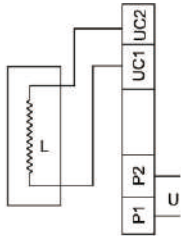
- Alarm switch    ○ Auxiliary switch
- Shunt release    ■ Undervoltage release

Note:

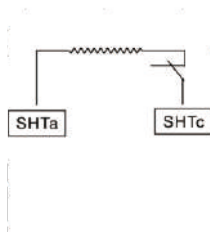
1. The company can provide three new products of right auxiliary switch, left shunt release and left undervoltage release for choice.
2. Within 220, 320, 240, 340, 270 and 370 specifications, auxiliary switch can be supplied with two pair switches, please specify in the order.
3. P switches of EKM8LY, EKM8E and EKM8EL can not be equipped with right auxiliary switch, right shunt release and right undervoltage release.

**Internal Accessories**

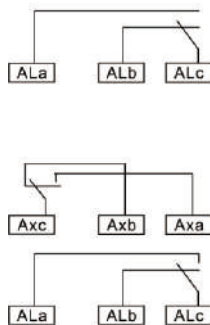
Internal accessories of EKM8, EKM8T, EKM8E, EKM8DC, EKM8L and EKM8EL series include undervoltage release, shunt release and auxiliary alarm release, their main technical parameters and wiring diagram are as follows:



Undervoltage release	
Rated voltage of power supply	Main features
AC220, AC240 AC380, AC415	A. Undervoltage release should act when voltage drops to within 70% and 35% of the rated voltage. B. The undervoltage release should not be able to close to prevent the circuit breaker from closing when voltage is lower than 35% of the rated voltage. C. The undervoltage release should ensure to be closed and ensure reliable closing of the circuit breaker when voltage is equal to or greater than 85% of the rated voltage.



Shunt release	
Rated voltage of power supply	Main features
DC24, DC110 AC220, AC380	Shunt release can work reliably when the rated voltage value is at 70% and 110%.



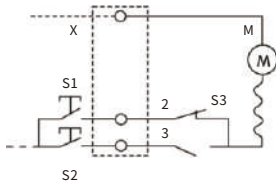
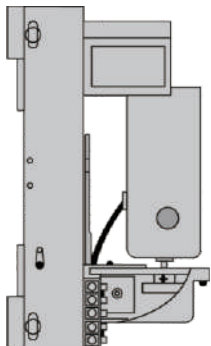
Auxiliary alarm contact	
Rated voltage of power supply	Main features
Auxiliary switch AC 125V 5A, AC 250V 3A DC 125V0.4A, DC 125V0.2A	Shunt release can work reliably when the rated voltage value is at 70% and 110%.
Alarm switch AC 125 5A, AC 250V 3A DC 125V0.4A, DC 125V 0.2A	Provide differentiated signals for the circuit breaker at "normal work" and "fault free trip" positions.
Auxiliary alarm switch AC 125V 5A, AC 250V 3A DC 125V0.4A.DC125V0.2A	Provide differentiated signals for the circuit breaker at "close", "open" and "fault free trip" positions.

## External Accessories

The main technical parameters, dimensions and installation diagrams of external accessories for EKM8、EKM8T、EKM8E、EKM8DC、EKM8L、EKM8EL series are as follows:

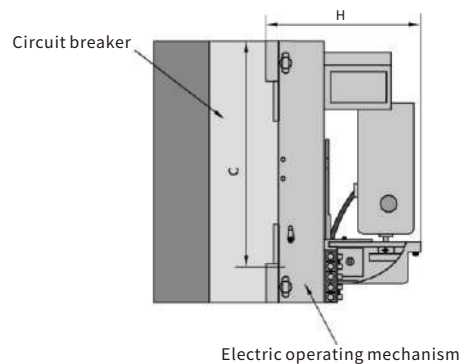
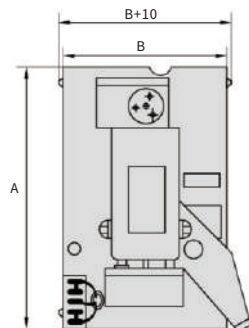
DC3 electric operating mechanism

DC1 series electric operating mechanism is driven by motor, which is suitable for 250A and above heavy current rating circuit breaker operation.



M-motor  
X-connection terminal  
S1、S2-button (user-supplied)  
S3-sensitive switch

Model & Spec.		
Power distribution circuit breaker	DC1-400/30	DC 1-630/30
	EKM8-400 EKM8L-400 EKM8T-400 EKM8DC-400 EKM8E-400 EKM8EL-400 EKM8-630 EKM8L-630 EKM8T-630 EKM8DC-630 EKM8E-630 EKM8EL-630	EKM8-800 EKM8L-800 EKM8T-800 EKM8DC-800 EKM8E-800 EKM8EL-800
Outline dim.	A	226
	B	132
	C	196
	H	139
Rated voltage (V)	AC400V, AC380V, AC230V, AC220V	
Starting current (A)	≤ 5.7	
Power (W)	120	
Operating times/hour (times)	120	

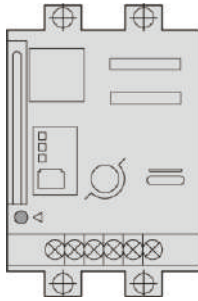




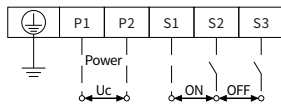
**External Accessories**

The main technical parameters, dimensions and installation diagrams of external accessories for EKM8、EKM8T、EKM8E、EKM8DC、EKM8L、EKM8EL series are as follows:

DC3 electric operating mechanism



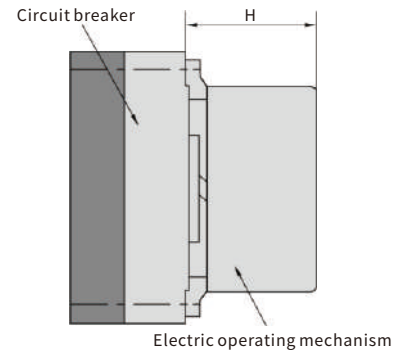
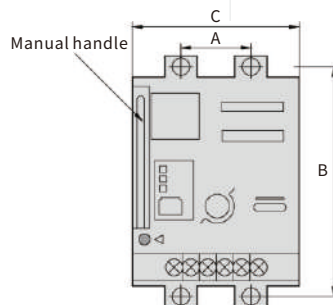
Wiring Diagram



Warning

1. Manually prohibit counterclockwise operation
2. When it is manual operation, insert the handle at the starting point, clockwise rotate it 180°

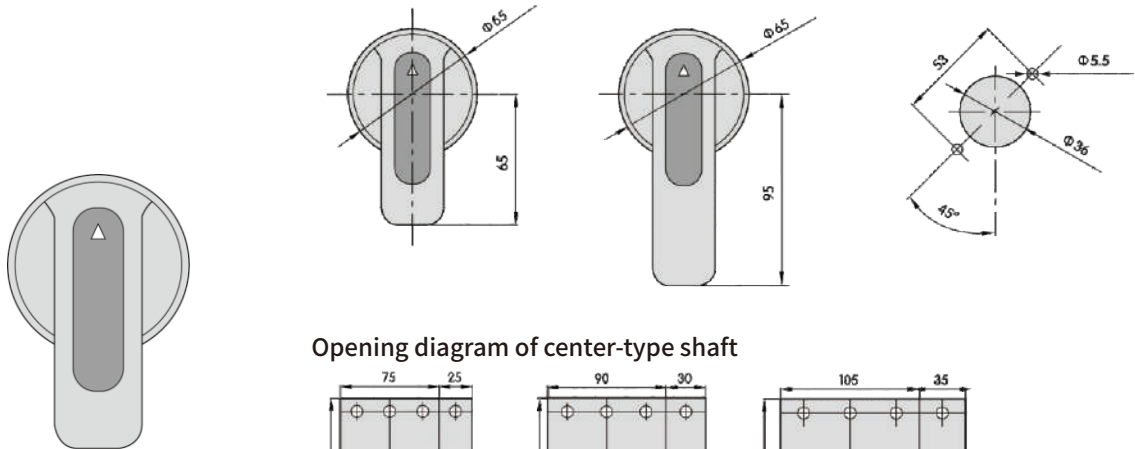
Model & Spec.	DC3-63/30	DC3-100/30	DC3-250/30	DC3-400/30	DC3-630/30	
Applicable model	EKM8-125	EKM8-160	EKM8-250	EKM8-400	EKM8-800	
	EKM8L-125	EKM8L-160	EKM8L-250	EKM8L-400	EKM8L-800	
	EKM8T-125	EKM8T-160	EKM8T-250	EKM8T-400	EKM8T-800	
	EKM8DC-125	EKM8DC-160	EKM8DC-250	EKM8DC-400	EKM8DC-800	
		EKM8E-160	EKM8E-250	EKM8E-400	EKM8E-800	
		EKM8EL-160	EKM8EL-250	EKM8EL-400	EKM8EL-800	
				EKM8-630		
				EKM8L-630		
				EKM8T-630		
				EKM8DC-630		
			EKM8E-630			
			EKM8EL-630			
Outline dim.	A	25	30	35	44	70
	B	117	132	126	194	243
	C	90	90	90	130	130
	H	88.5	89.5	92	152	153
Rated voltage (V)	AC-110-24, DC100-220, DC24			AC230, DC220 or AC110, DC110, DC24		
Starting current (A)	≤0.5			≤2		
Mechanical life (times)	1400		10000	5000		
Power (W)	14			35		



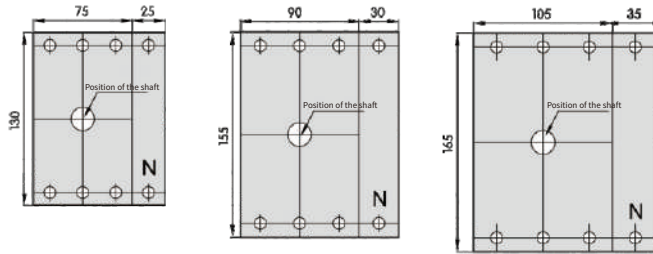
External Accessories

Manual operating mechanism

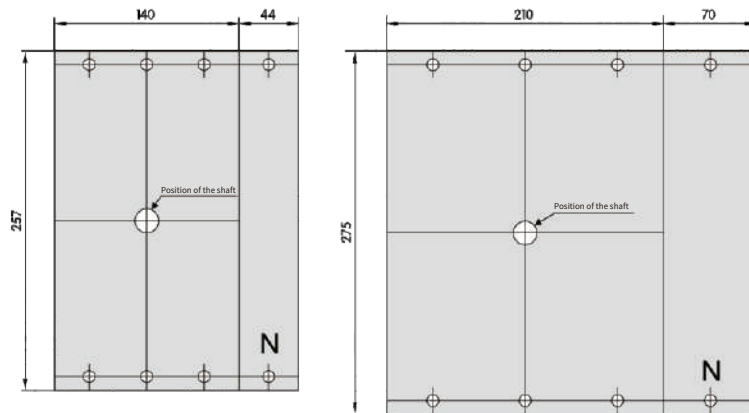
Appearance of round handles and door opening size (the distance from center of opening to the hinge is not less than 200mm)



Opening diagram of center-type shaft



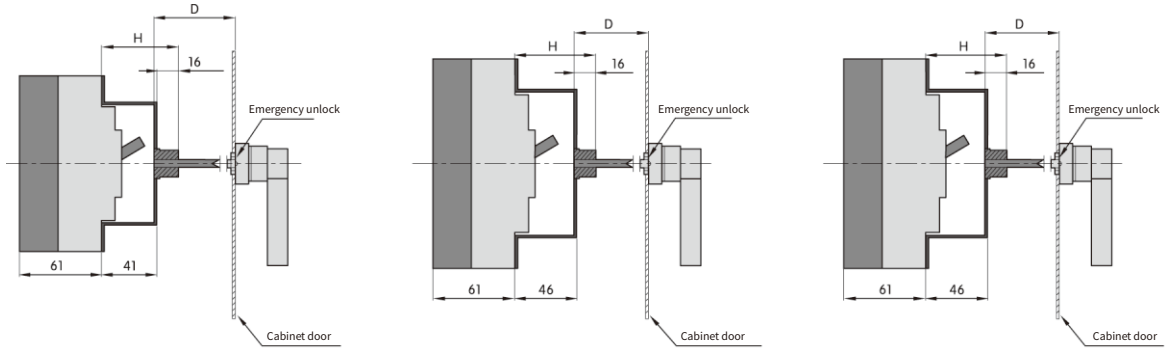
EKM8-125	EKM8-160	EKM8-250
EKM8L-125	EKM8L-160	EKM8L-250
EKM8T-125	EKM8T-160	EKM8T-250
EKM8DC-125	EKM8DC-160	EKM8DC-250
	EKM8E-160	EKM8E-250
	EKM8EL-160	EKM8EL-250



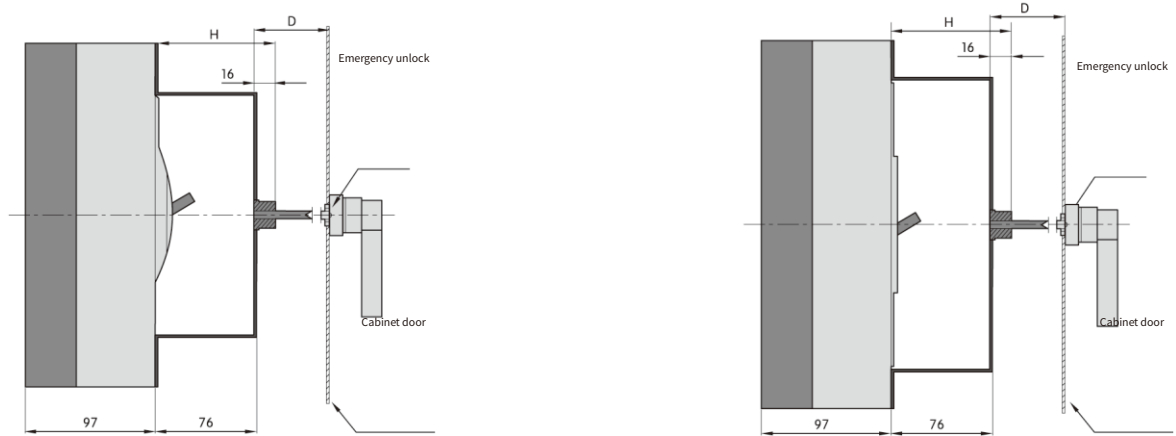
EKM8-400	EKM8-630	EKM8-800
EKM8L-400	EKM8L-630	EKM8L-800
EKM8T-400	EKM8T-630	EKM8T-800
EKM8DC-400	EKM8DC-630	EKM8DC-800
EKM8E-400	EKM8E-630	EKM8E-800
EKM8EL-400	EKM8EL-630	EKM8EL-800

External Accessories

Installation diagram of cabinet and door



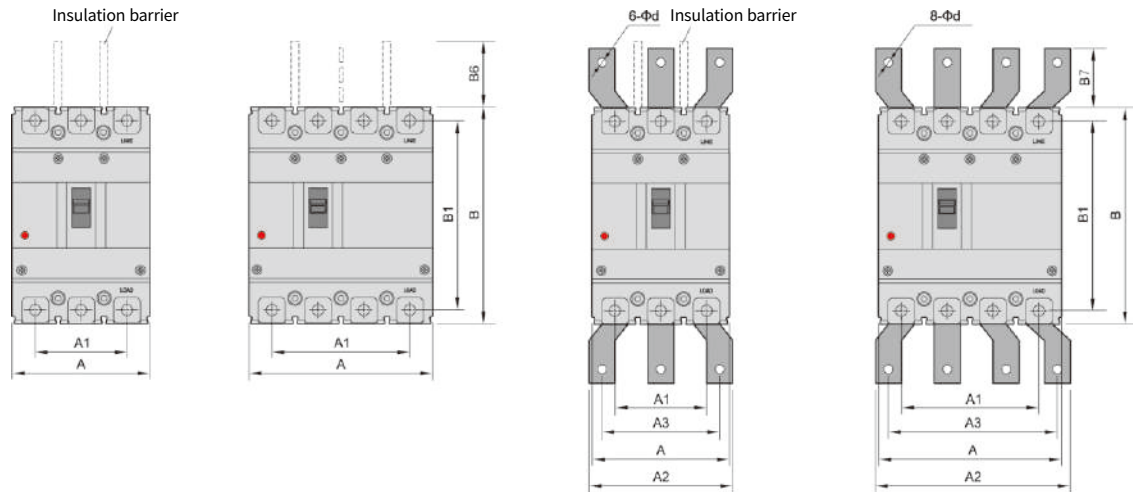
EKM8-125	EKM8-160	EKM8-250
EKM8L-125	EKM8L-160	EKM8L-250
EKM8T-125	EKM8T-160	EKM8T-250
EKM8DC-125	EKM8DC-160	EKM8DC-250
	EKM8E-160	EKM8E-250
	EKM8EL-160	EKM8EL-250



EKM8-400	EKM8-630	EKM8-800
EKM8L-400	EKM8L-630	EKM8L-800
EKM8T-400	EKM8T-630	EKM8T-800
EKM8DC-400	EKM8DC-630	EKM8DC-800
EKM8E-400	EKM8E-630	EKM8E-800
EKM8EL-400	EKM8EL-630	EKM8EL-800

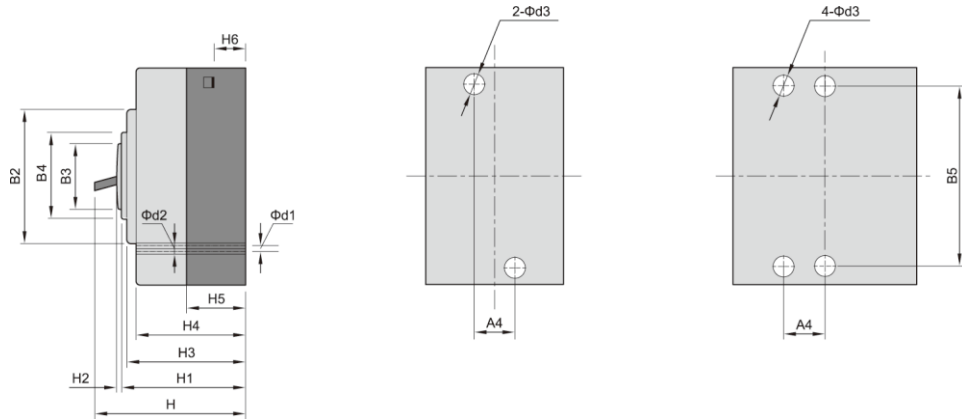
Note:  
the length of the square shaft D = 150mm, when its length is no more than 150mm, please specify it in the order.

## Front-board Outline and Installation Dimensions



Model						Outline Dim.	
Moulded-case circuit breaker (MCCB)	Residual-current circuit breaker (RCCB)	Thermomagnetic adjustable circuit breaker	DC circuit breaker	Electronic adjustable circuit breaker	Electronic adjustable residual-current circuit breaker	A	
						3P	4P
EKM8-125S	EKM8L-125S	-	-	-	-	75	100
EKM8-125H	EKM8L-125H	-	-	-	-	75	100
EKM8-160S	EKM8L-160S	EKM8T-160S	-	-	-	90	120
EKM8-160M	EKM8L-160M	EKM8T-160M	EKM8DC-160H	EKM8E-160	EKM8EL-160	90	120
EKM8-160H	EKM8L-160H	EKM8T-160H	-	-	-	90	120
EKM8-250S	EKM8L-250S	EKM8T-250S	-	-	-	105	140
EKM8-250M	EKM8L-250M	EKM8T-250M	EKM8DC-250H	EKM8E-250	EKM8EL-250	105	140
EKM8-250H	EKM8L-250H	EKM8T-250H	-	-	-	105	140
EKM8-400S	EKM8L-400S	EKM8T-400S	-	-	-	140	184
EKM8-400H	EKM8L-400H	EKM8T-400H	EKM8DC-400H	EKM8E-400	EKM8EL-400	140	184
EKM8-630S	EKM8L-630S	EKM8T-630S	-	-	-	140	184
EKM8-630H	EKM8L-630H	EKM8T-630H	EKM8DC-630H	EKM8E-630	-	140	184
EKM8-800S	-	EKM8T-800S	-	-	-	210	280
EKM8-800H	EKM8L-800H	EKM8T-800H	EKM8DC-800H	EKM8E-800	EKM8EL-800	210	280

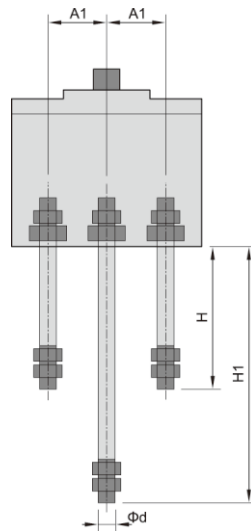
## Front-board Outline and Installation Dimensions



Outline Dim.																				Installation Dim.		Terminal Screw				
A1	A2	A3	B	B1	B2	B3	B4	B6	B7	H	H1	H2	H3	H4	H5	H6	Φd	Φd1	Φd2	Φd3	A4	B5				
3P	4P	3P	4P	3P	4P																					
50	75	-	-	-	-	130	114	84	50	59	50	-	90	72	4	68	61	40	23	-	4.5	8.5	5	25	111	M6/M8
50	75	-	-	-	-	130	114	84	50	59	50	-	90	72	4	68	61	40	23	-	4.5	8.5	5	25	111	M6/M8
60	90	-	-	-	-	155	134	102	50	59	50	-	90	72	4	68	61	40	23	-	4.5	8.5	5	30	132	M8
60	90	-	-	-	-	155	134	102	50	59	50	-	90	72	4	68	61	40	23	-	4.5	8.5	5	30	132	M8
60	90	-	-	-	-	155	134	102	50	59	50	-	115	91	4	88	81	60	23	-	4.5	8.5	5	30	132	M8
70	105	-	-	-	-	165	144	102	50	59	100	-	92	72	4	68	61	40	23	-	4.5	8.5	5	35	126	M8
70	105	-	-	-	-	165	144	102	50	59	100	-	92	72	4	68	61	40	23	-	4.5	8.5	5	35	126	M8
70	105	-	-	-	-	165	144	102	50	59	100	-	115	91	4	88	81	60	23	14	4.5	8.5	5	35	126	M8
88	132	140	196	112	168	257	230	150	90	99	110	43	155	107	5	103	97	64	30	14	7	13	7	44	194	M10
88	132	140	196	112	168	257	230	150	90	99	110	42	155	107	5	103	97	64	30	14	7	13	7	44	194	M10
88	132	140	196	112	168	257	230	150	90	99	110	43	155	107	5	103	97	64	30	14	7	13	7	44	194	M10
88	132	140	196	112	168	257	230	150	90	99	110	42	155	107	5	103	97	64	30	14	7	13	7	44	194	M10
140	210	180	250	140	210	275	243	150	90	102	110	87	155	107	5	103	97	64	26	14	8	14	7	70	243	M12
140	210	180	250	140	210	275	243	150	90	102	100	87	155	107	5	103	97	64	26		8	14	7	70	243	M12

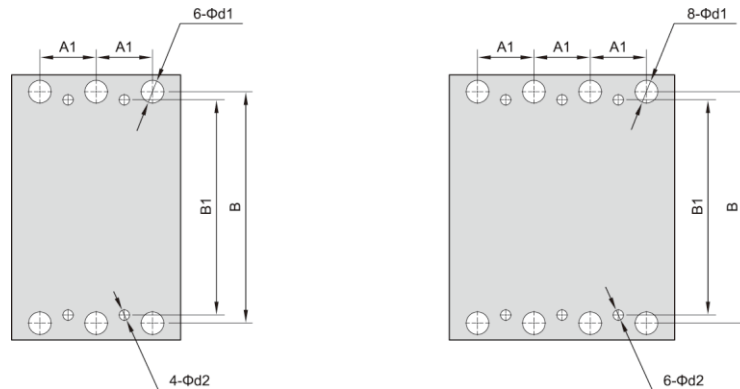


## Dimension of Back-board Wiring



Model					
Moulded-case circuit breaker (MCCB)	Residual-current circuit breaker (RCCB)	Thermomagnetic adjustable circuit breaker	DC circuit breaker	Electronic adjustable circuit breaker	Electronic adjustable residual-current circuit breaker
EKM8-125S	EKM8L-125S	-	-	-	-
EKM8-125H	EKM8L-125H	-			
EKM8-160S	EKM8L-160S	EKM8T-160S			
EKM8-160M	EKM8L-160M	EKM8T-160M	EKM8DC-160H	EKM8E-160	EKM8EL-160
EKM8-160H	EKM8L-160H	EKM8T-160H			
EKM8-250S	EKM8L-250S	EKM8T-250S			
EKM8-250M	EKM8L-250M	EKM8T-250M	EKM8DC-250H	EKM8E-250	EKM8EL-250
EKM8-250H	EKM8L-250H	EKM8T-250H			
EKM8-400S	EKM8L-400S	EKM8T-400S			
EKM8-400H	EKM8L-400H	EKM8T-400H	EKM8DC-400H	EKM8E-400	EKM8EL-400
EKM8-630S	EKM8L-630S	EKM8T-630S			
EKM8-630H	EKM8L-630H	EKM8T-630H	EKM8DC-630H	EKM8E-630	
EKM8-800S	-	EKM8T-800S			
EKM8-800H	EKM8L-800H	EKM8T-800H	EKM8DC-800H	EKM8E-800	EKM8EL-800

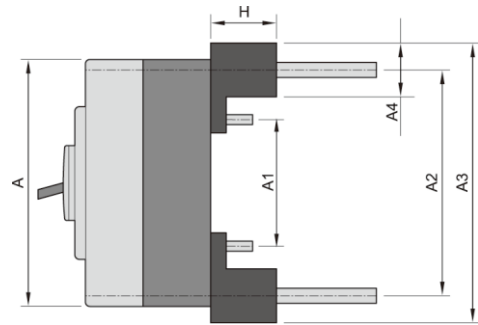
## Dimension of Back-board Wiring



Dimension of Back-board Wiring

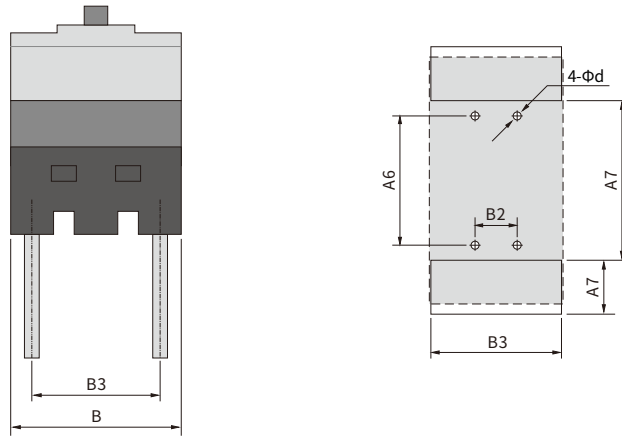
	A1	B	B1	H	H1	Φd	Φd1	Φd2
	25	114	111	62	87	6	14	5
	25	114	111	62	87	6	14	5
	30	134	132	72	112	8	18	5
	30	134	132	72	112	8	18	5
	30	134	132	72	112	8	18	5
	35	144	126	87	126	12	24	5
	35	144	126	87	126	12	24	5
	35	144	126	87	126	12	24	5
	44	230	194	83	136	18	35	7
	44	230	194	83	136	18	35	7
	44	230	194	83	136	18	35	7
	44	230	194	83	136	18	35	7
	70	243	243	174	243	26	48	7
	70	243	243	174	243	26	48	7

## Dimension of Plug-in Type Wiring



Model					
Moulded-case circuit breaker (MCCB)	Residual-current circuit breaker (RCCB)	Thermomagnetic adjustable circuit breaker	DC circuit breaker	Electronic adjustable circuit breaker	Electronic adjustable residual-current circuit breaker
EKM8-125S	EKM8L-125S	-	-	-	-
EKM8-125H	EKM8L-125H	-	-	-	-
EKM8-160S	EKM8L-160S	EKM8T-160S	-	-	-
EKM8-160M	EKM8L-160M	EKM8T-160M	EKM8DC-160H	EKM8E-160	EKM8EL-160
EKM8-160H	EKM8L-160H	EKM8T-160H	-	-	-
EKM8-250S	EKM8L-250S	EKM8T-250S	-	-	-
EKM8-250M	EKM8L-250M	EKM8T-250M	EKM8DC-250H	EKM8E-250	EKM8EL-250
EKM8-250H	EKM8L-250H	EKM8T-250H	-	-	-
EKM8-400S	EKM8L-400S	EKM8T-400S	-	-	-
EKM8-400M	EKM8L-400M	EKM8T-400M	EKM8DC-400H	EKM8E-400	EKM8EL-400
EKM8-400H	EKM8L-400H	EKM8T-400H	-	-	-
EKM8-630S	EKM8L-630S	EKM8T-630S	-	-	-
EKM8-630M	EKM8L-630M	EKM8T-630M	EKM8DC-630H	EKM8E-630	-
EKM8-630H	EKM8L-630H	EKM8T-630H	-	-	-
EKM8-800S	-	EKM8T-800S	-	-	-
EKM8-800M	EKM8L-800M	EKM8T-800M	EKM8DC-800H	EKM8E-800	EKM8EL-800
EKM8-800H	EKM8L-800H	EKM8T-800H	-	-	-

## Dimension of Back-board Wiring



Dimension of back-board Wiring

	A	A1	A2	A3	A4	A5	A6	A7	H	B	B1	B2	B3	Φd2
	130	54	114	140	29	31	54	80	48	75	50	25	78	5.2
	130	54	114	140	29	31	54	80	48	75	50	25	78	5.2
	155	54	134	168	38	40	54	92	52	90	60	30	93	6.5
	155	54	134	168	38	40	54	92	52	90	60	30	93	6.5
	155	54	134	168	38	40	54	92	52	90	60	30	93	6.5
	165	54	144	182	45	47	54	90	50	105	70	70	108	6.5
	165	54	144	182	45	47	54	90	50	105	70	70	108	6.5
	165	54	144	182	45	47	54	90	50	105	70	70	108	6.5
	257	140	230	282	55	55	140	171	60	134	87	44	136	8.2
	257	140	230	282	55	55	140	171	60	134	87	44	136	8.2
	257	140	230	282	55	55	140	171	60	134	87	44	136	8.2
	257	140	230	282	55	55	140	171	60	134	87	44	136	8.2
	275	155	243	298	55	56	155	187	60	206	140	70	208	8.2
	275	155	243	298	55	56	155	187	60	206	140	70	208	8.2

## Operating Characteristics

1. Power distribution circuit breaker are charged for every poles at the same time when the ambient air temperature is +40°C, its inverse time action characteristics without humidity compensation are as shown in the following table:

Name of test current	Multiple of setting current	Conventional time	Initial state
		$I_n \leq 63$ $63 < I_n$	
Conventional non-tripping current	1.05	$\geq 1h$ $\geq 2h$	Cold state
Conventional tripping current	1.30	$< 1h$ $< 2h$	Thermal state

2. Motor protection circuit breaker are charged for every poles at the same time when the ambient air temperature is +40°C, its inverse time action characteristics without humidity compensation are as shown in the following table:

Name of test current	Multiple of setting current	Conventional time	Initial state
		$I_n \leq 800$	
Conventional non-tripping current	1.0	$\geq 2h$	Cold state
Conventional tripping current	1.2	$< 2h$	Thermal state

3. Operating characteristics under short-circuit condition:

- Short-circuit current setting value of instantaneous release of the power distribution circuit breaker is  $10I_n$ ;
- Short-circuit current setting value of instantaneous release of the motor protection circuit breaker is  $12I_n$ ;
- Accuracy of the short-circuit current setting value of instantaneous release is  $\pm 20\%$ .

## Installation

- Check whether the nameplate of the circuit breaker meets the requirements before installation, the cross-section of copper wire should be matched with the rated current of the circuit breaker.
- All fasteners must be tightened during installation.
- The cover of circuit breaker can not be opened, its parameters has been set and qualified in the factory, please do not adjust it.

## Use and Maintenance

- The handle of the circuit breaker should be moved upwards and downwards for several time before switching on the circuit breaker, the operation mechanism should act reliably.
- After the control circuit comes across general failures, the circuit breaker is opened, then the handle is in a vertical position.
- If user wants to make the breaker closing, firstly, find out the cause and remove the fault, pull the handle down, make the operating mechanism re-trip, then pull the handle to the position "close" , and the circuit breaker can be closed..
- The surface of the circuit breaker should be cleaned regularly to maintain good insulation.
- Protect the circuit breaker from impact or fall, or attack of rain or snow during operation, storage and transportation.
- Circuit breakers produced by the company are guaranteed for 18 month since the date of production or the date of purchase (as per the date of the invoice). The company will be responsible for free replacement or repair for the defective product caused by manufacturing issue on the premise of intact seal.

## Enclosed Documents

The documents such as Certificate of Conformity, Operating Manual, Packing List and so on should be enclosed.

## Order Guide

- Name and model of circuit breaker;
- Rated current and setting multiple of circuit breaker;
- Accessory name and rated voltage.

eg.: Order 50 sets of circuit breaker of power distribution 125 type, with rated current 100A standard type AC 380V undervoltage release, complex release, N-pole is not installed with overcurrent release and will close and open together with other three poles.

Please write like this: EKM8-125L74370 100A 1 B Q 3, circuit breaker 50 sets.



EKA1-2000



EKA1-3200

### Type Selection Guide

EKA1	2000	3P	400A	F	AC230V	Horizontal wiring
↓	↓	↓	↓	↓	↓	↓
Product code	Frame size	Pole number	Current class	Installation code	Code of control circuit source voltage	Connection mode
Conventional circuit breaker	2000	3P: three-pole 4P: four-pole	400A	D: drawout type F: fixed type	AC230V	Horizontal wiring Vertical wiring
	3200		2500A		AC400V	
	6300		630A		DC220V	
			800A		DC110V	
			1000A			
			1250A			
			1600A			
			2000A			
			2500A			
			2900A			
			3200A			
			3900A			
			4000A			
			5000A			
			6300A			

### Type Selection of Standard Parts and Optional Accessories

M type	230V	230V	230V	6 NO 6 NC
↓	↓	↓	↓	↓
Model of controller	Voltage of shunt release	Voltage of energy releasing electromagnet	Voltage of electric operating mechanism	Auxiliary contact
AA type 2H type 3B2 type 3H type	AC230V AC400V DC220V DC110V	AC230V AC400V DC220V DC110V	AC230V AC400V DC220V DC110V	Standard: 6NO6NC recommended

Undervoltage protection	Mechanical interlocking	Opening locking	Dual-power interlocking	Accessories
<input type="checkbox"/> Undervoltage release <input type="checkbox"/> Undervoltage instantaneous release <input type="checkbox"/> Undervoltage time-delay release: D1s D3s D5s <input type="checkbox"/> AC230V <input type="checkbox"/> DC220V <input type="checkbox"/> AC400V <input type="checkbox"/> DC110V	<input type="checkbox"/> Horizontal interlocking (wirerope interlocking) <input type="checkbox"/> Vertical interlocking (wirerope interlocking)	<input type="checkbox"/> One lock one key <input type="checkbox"/> Two locks one key <input type="checkbox"/> Three locks two keys <input type="checkbox"/> Five locks three keys	<input type="checkbox"/> Intelligent horizontal interlocking	<input type="checkbox"/> Doorframe <input type="checkbox"/> Phase partition <input type="checkbox"/> Phase partition strip

Note: mark V in  if need the corresponding optional accessory

### Operating Characteristics

EKA1-2000/3P 400A F AC230V (fixed type 3-pole 400A voltage of control circuit (230V) default horizontal wiring, rated voltage 400V, M type controller, shunt 230V, electric operating mechanism 230V, standard 6 NO 6 NC contacts. Please specify according to the above table if need other accessories.



## Model Guide of Intelligent Controller

Configuration	Model			
	M	2H	3B2	3H
Protection functions	●	●	●	●
Overload long delay (L)	●	●	●	●
Short-circuit short delay (S)	●	●	●	●
Short-circuit instantaneous (I)	●	●	●	●
Ground fault (G)/alarm	●	●	●	●
Neutral line overcurrent protection (N)	○	●	●	●
Current unbalance protection	○	●	●	●
Load monitoring(Load) <sup>[1]</sup>	□	●	□	●
Making current protection (MCR) <sup>[2]</sup>	□	○	□	●
Out-of-limit tripping (HSIOC)	○	○	○	○
Leakage protection/alarm (R) <sup>[3]</sup>	—	□	□	□
Required current protection	—	—	—	●
Overvoltage/undervoltage protection	—	●	●	●
Voltage unbalance protection	—	●	●	●
Reverse power protection	—	—	—	●
Required power protection	—	—	—	●
Overfrequency/underfrequency protection	—	—	—	●
Phase-sequence protection	—	—	—	●
Measurement functions				
Real-time current value, maximum measured value	●	●	●	●
Required current measurement	—	—	—	●
Current harmonics, waveform measurement	—	—	—	●
Real-time voltage value, maximum measured value	—	●	●	●
Voltage harmonics, waveform measurement	—	—	—	●
Power / power factor measurement	—	—	●	●
Energy measurement	—	—	—	●
Required power measurement	—	—	—	●
Voltage frequency measurement	—	●	●	●
Hot melt measurement	—	●	●	●
Circuit breaker contact equivalent measurement	—	●	●	●
Auxiliary functions				
Long delay protection curve selection	○	●	●	●
Fault / alarm log (and query)	●	●	●	●
Test function	●	●	●	●
Self-test and alarm functions	●	●	●	●
Circuit breaker opening/closing (operation) records <sup>[2]</sup>	—	□	□	●
Protection parameter lockout	●	●	●	●
Zone interlocking (ZSI) function <sup>[4]</sup>	—	—	□	—
Communication function	—	●	□	●

● Standard configuration      ○ Auxiliary configuration      — No configuration  
 □ Functions that can be added to the standard configuration with appropriate hardware

Note:

[1]: Need to configure the relay module;

[2]: Need to configure microswitch for detecting opening/closing of circuit breaker;

[3]: Need to configure the leakage transformer (zero-sequence current transformer);

[4]: Need to configure the ZSI circuit module.

Main Performance Indexes					
		EKA1-2000	EKA1-3200	EKA1-6300	
Frame size rated current Inm (A)		2000	3200	6300	
Pole number		3,4	3,4	3,4	3
Rated current In (A)		400, 630, 800,1000 1250,1600,2000	2000, 2500 2900, 3200	4000, 5000	6300
Rated voltage Ue (V)		400, 690	400,690	400, 690	400,690
Insulation voltage Ui (V)		1000	1000	1000	1000
Impulse withstand voltage Uimp (V)		12000	12000	8000	8000
Power frequency withstand voltage U (V)		AC3500 50HZ	AC3500 50HZ	AC3500 50HZ	AC3500 50HZ
Rated current of N-pole IN (A)		50%In	50%In	50%In,100%In	50%In,100%In
Ultimate breaking capacity Icu (kA)	AC400V	80	100	120	120
	AC690V	50	65	85	85
Running breaking capacity Ics (kA)	AC400V	50	80	100	100
	AC690V	40	65	75	75
Short-current making capacity Icm (kA)	AC400V	176	220	264	264
	AC690V	105	143	165	165
Short-time withstand current(1s)(RMS) Icw (kA)	AC400V	50	80	100	100
	AC690V	40	50	75	75
Closing time (ms)		70 (max)	70 (max)	70 (max)	70 (max)
Operating performance	AC400V	6500	3000	500	500
	AC690V	3000	1500	500	500
	Maintenance free	15000	10000	4000	4000
	Maintenance required	30000	20000	8000	8000
Connection mode		Horizontal vertical	Horizontal vertical	Horizontal	Horizontal
Overall dim. H(height)×W(width) ×L(thickness)	Fixed type 3P	402 x 362 x 323	402 x 422 x 323	—	—
	Fixed type 4P	402 x 457 x 323	402 x 537 x 323	—	—
	Drawout type 3P	432 x 375 x 421	432 x 435 x 421	432 x 813 x 494	432 x 928 x 494
	Drawout type 4P	432 x 470 x 421	432 x 550 x 421	432 x 928 x 494	—

— null

**Overall and Mounting Dimensions**

Outline and installation dimensions of fixed type circuit breaker, see Fig.10, 11

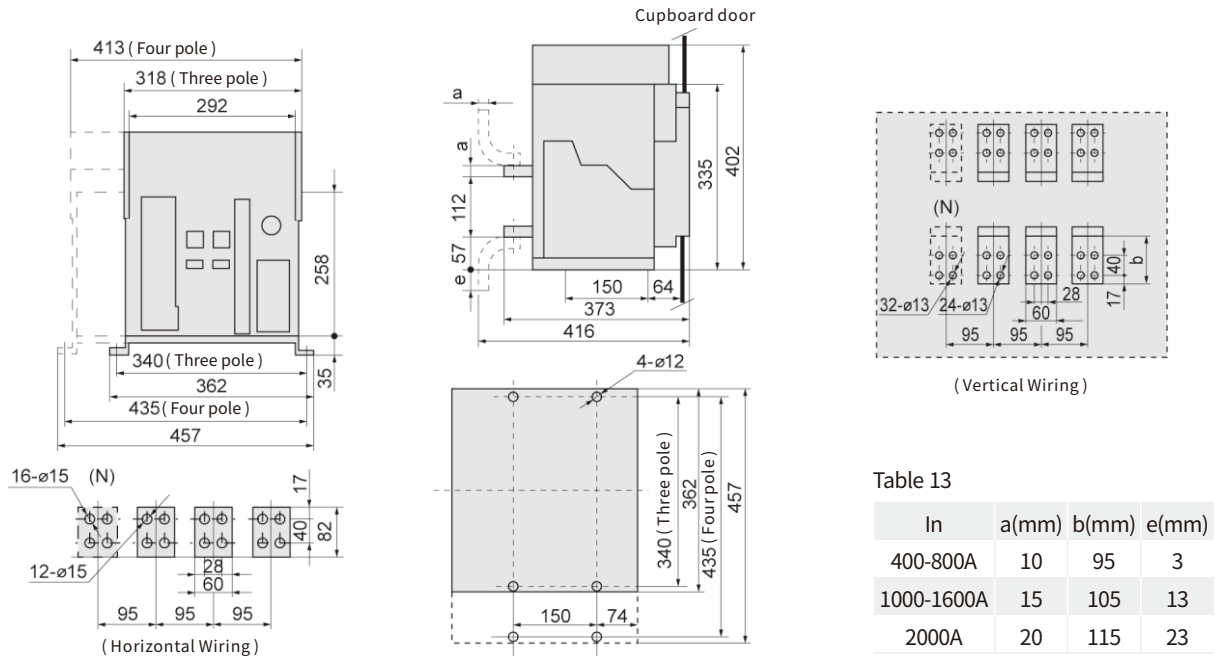


Fig.10 Outline and installation dimensions of fixed type circuit breaker (EKA1-2000, 2000/4)

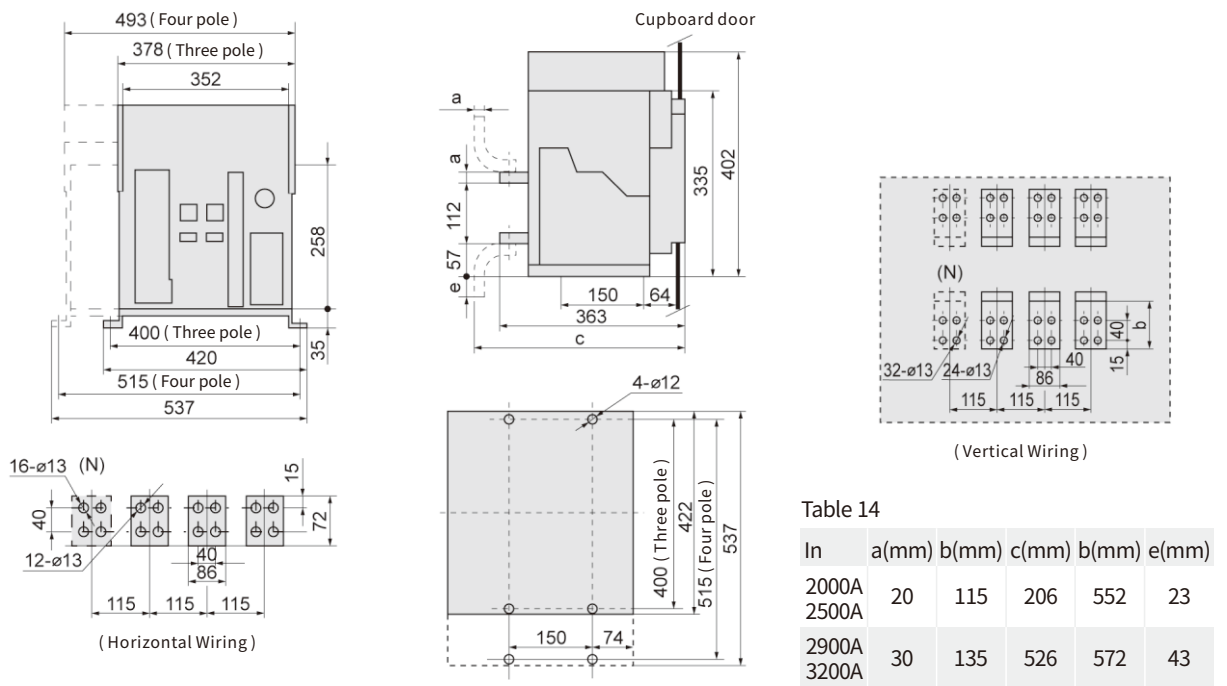


Fig.11 Outline and installation dimensions of fixed type circuit breakers (EKA1-3200, 3200/4)

**Overall and Mounting Dimensions**

Outline and installation dimensions of drawout type circuit breaker, see Fig.12, 13, 14, 15, 16, 17 and 18

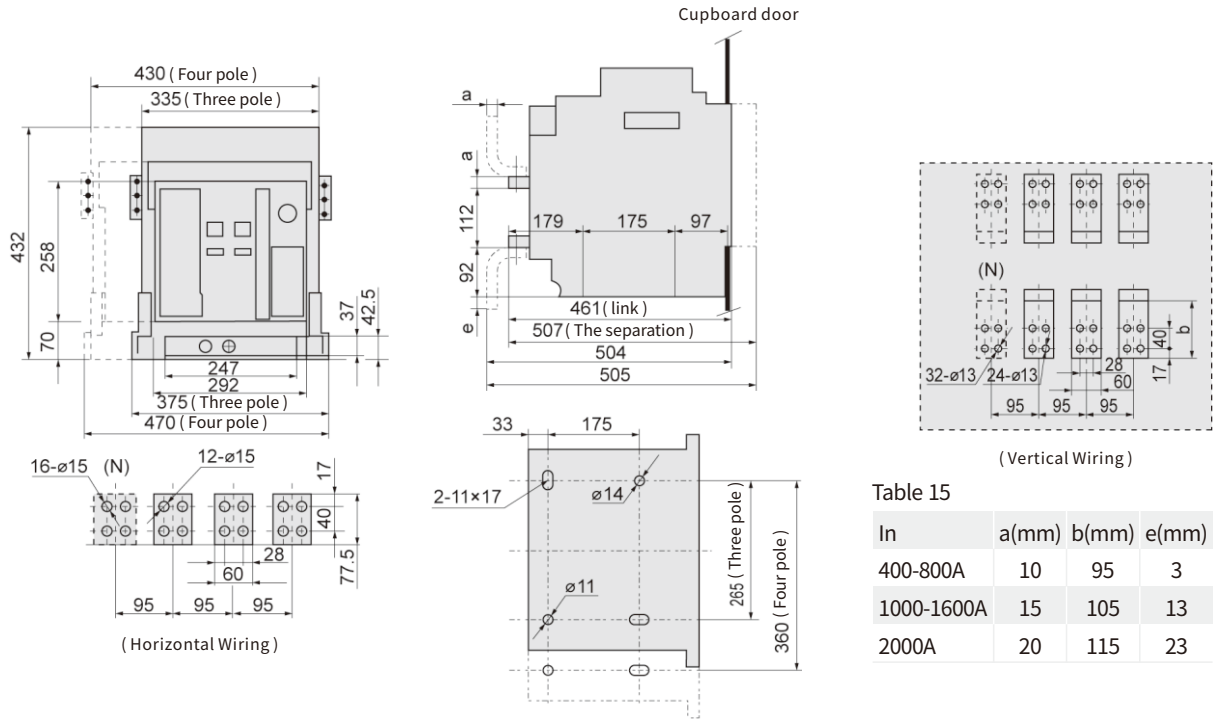


Table 15

In	a(mm)	b(mm)	e(mm)
400-800A	10	95	3
1000-1600A	15	105	13
2000A	20	115	23

Fig.12 Outline and installation dimensions of drawout type circuit breaker (EKA1-2000, 2000/4)

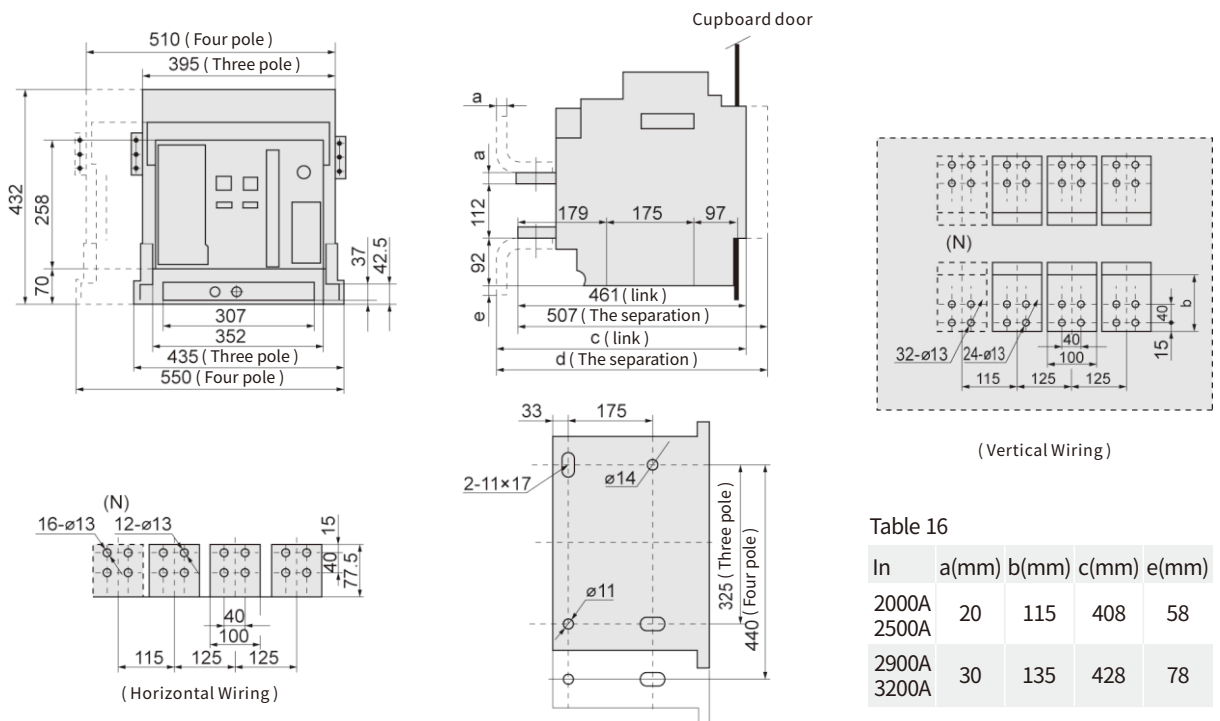


Table 16

In	a(mm)	b(mm)	c(mm)	e(mm)
2000A	20	115	408	58
2500A				
2900A	30	135	428	78
3200A				

Fig.13 Outline and installation dimensions of drawout type circuit breaker (EKA1-3200, 3200/4)

Overall and Mounting Dimensions

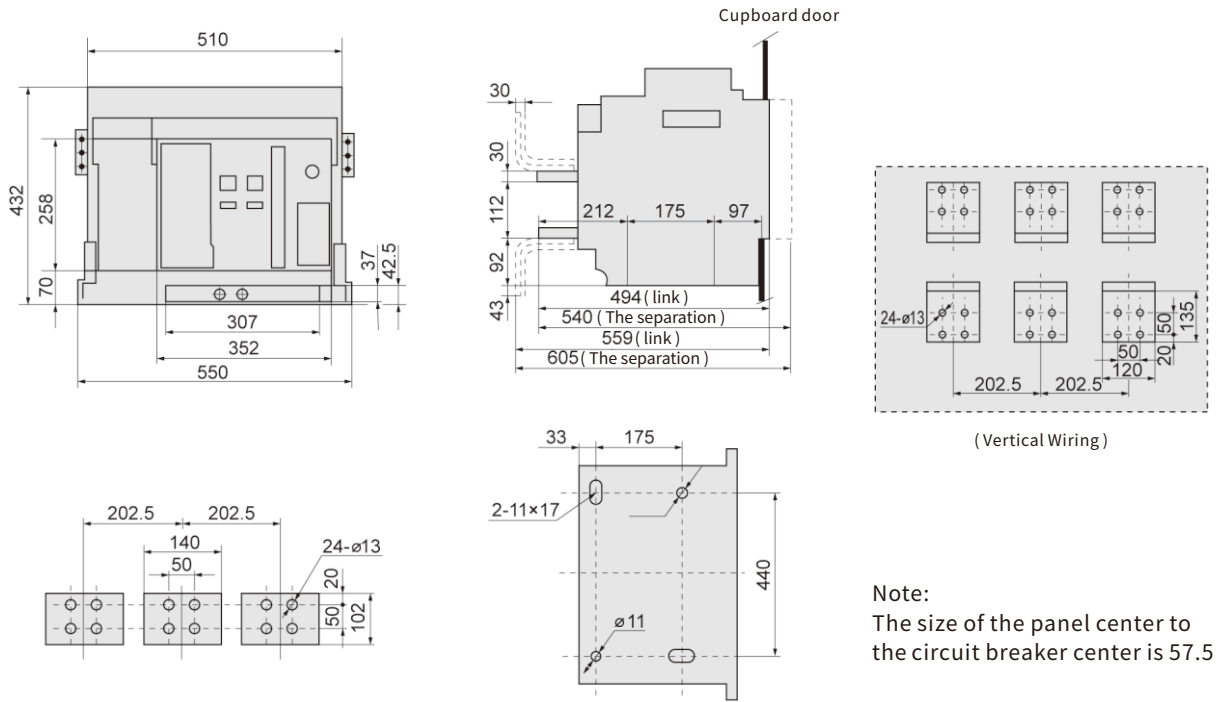


Fig. 14 Outline and installation dimensions of drawout type circuit breaker (EKA1-4000)

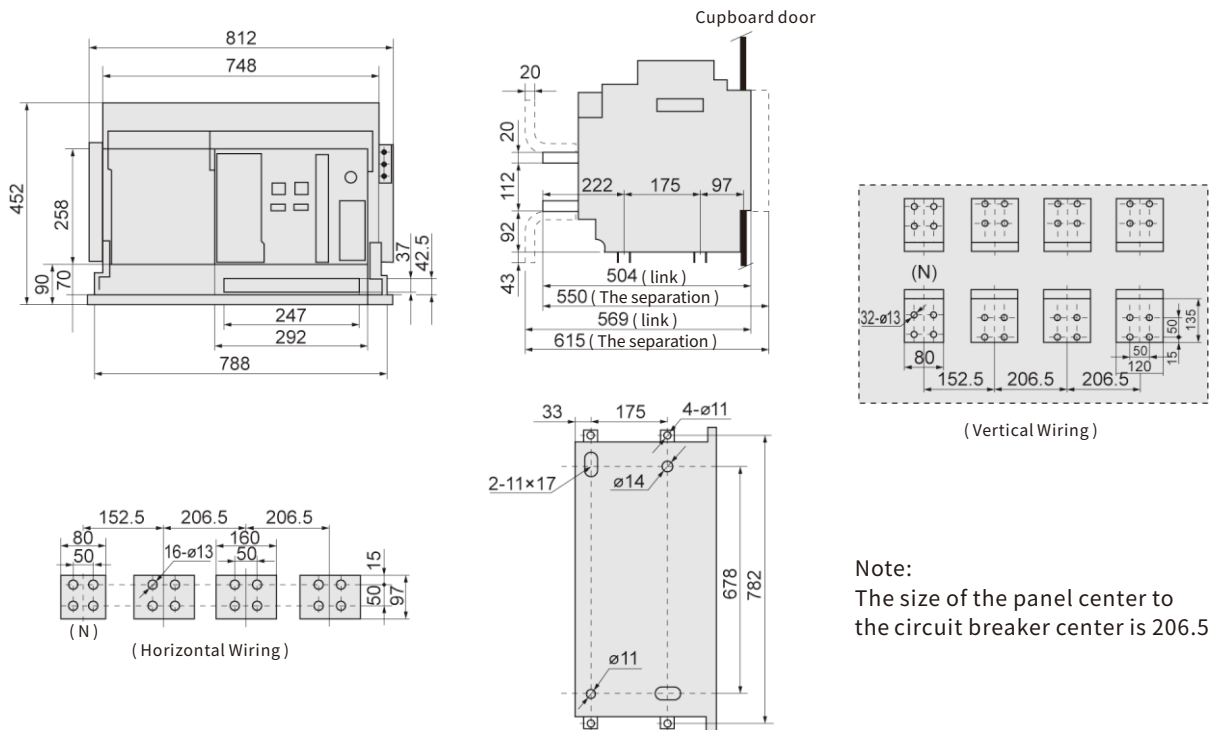


Fig.15 Outline and installation dimensions of drawout type circuit breaker (EKA1-4000/4)

Overall and Mounting Dimensions

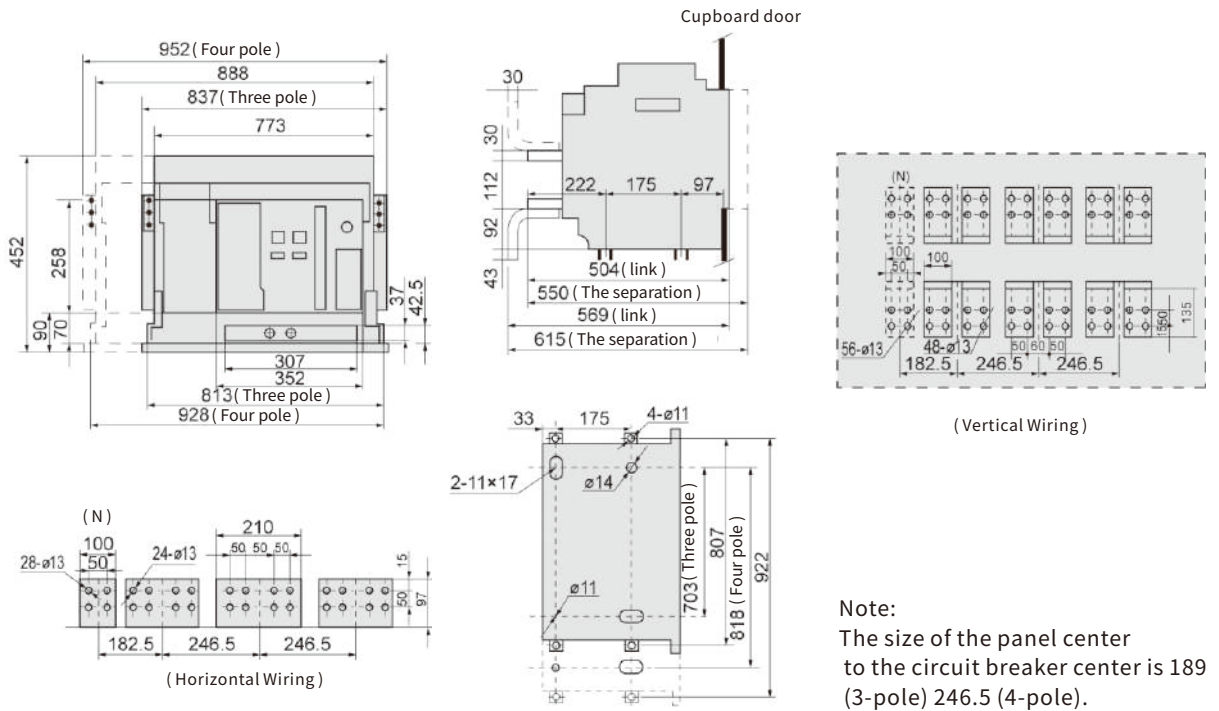


Fig.16 Outline and installation dimensions of drawout type circuit breaker (EKA1-6300, 6300/4 In=4000, 5000)

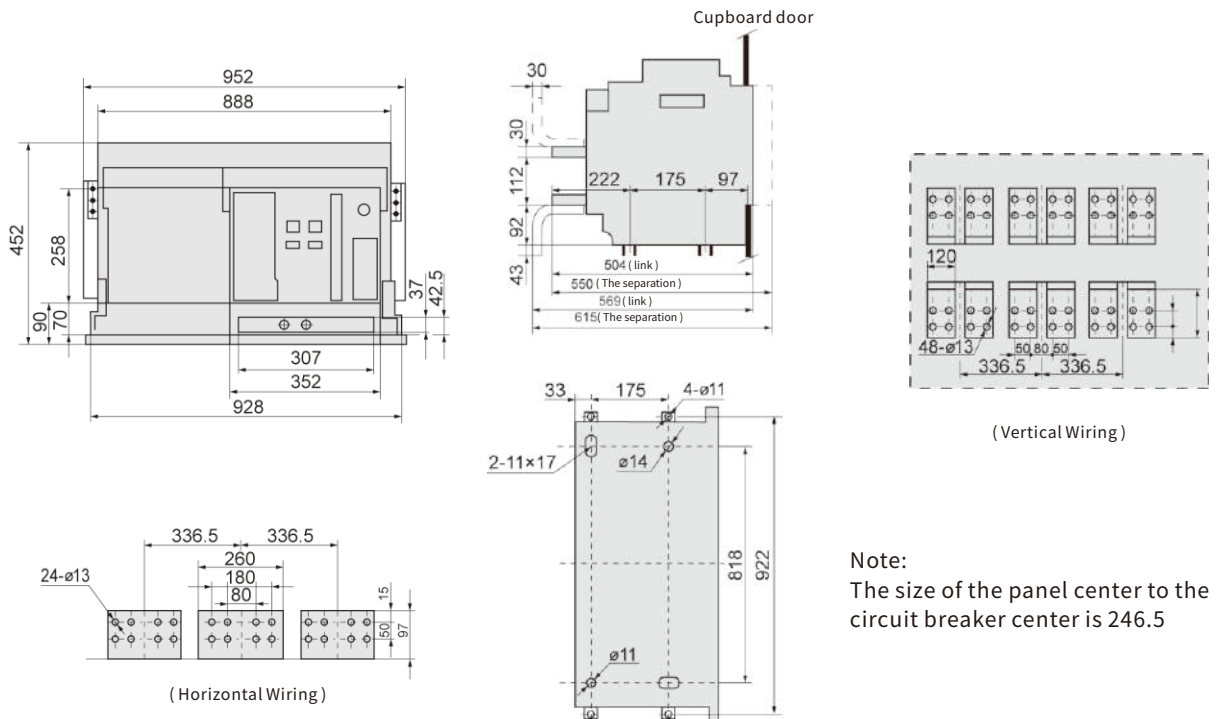
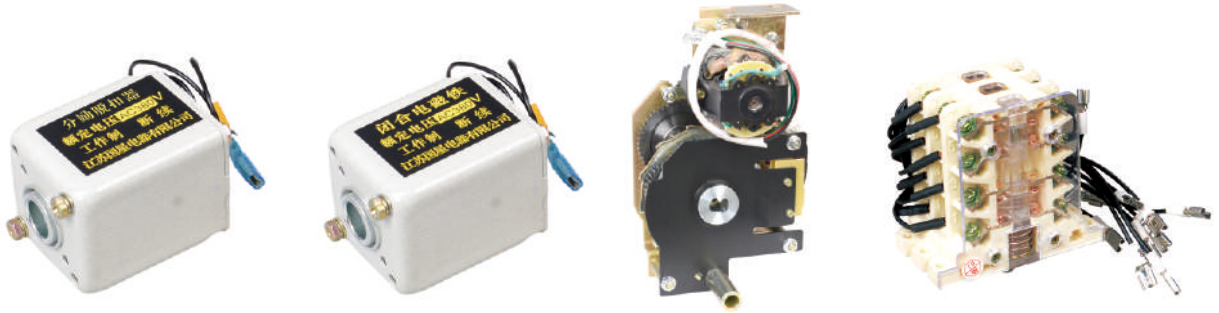


Fig.17 Outline and installation dimensions of drawout type circuit breaker (EKA1-6300 In=6300A)

### Accessories

#### Standard Accessories



Item	Function	Us
Shunt release	Let the circuit breaker disconnect reliably and remotely at circuit voltage (70%-110%)Us	
Closing coil	Let the circuit breaker switch on reliably and remotely in energy storing state at circuit voltage (85%-110%)Us	
Motor	Let the operating mechanism store energy at circuit voltage (85%-110%)Us to prepare for closing of circuit breaker. When the operating mechanism is energy stored, the motor will be stopped through microswitch.	AC230V AC400V DC220V DC110V
Auxiliary switch	Change over the ON and OFF state of circuit breaker, also guarantee short-time power on working and on/off switching of closing coil of shunt release, conventional thermal current 6A, rated control capacity Pe is AC 300VA, DC 60W, standard type 6 NO 6 NC.	

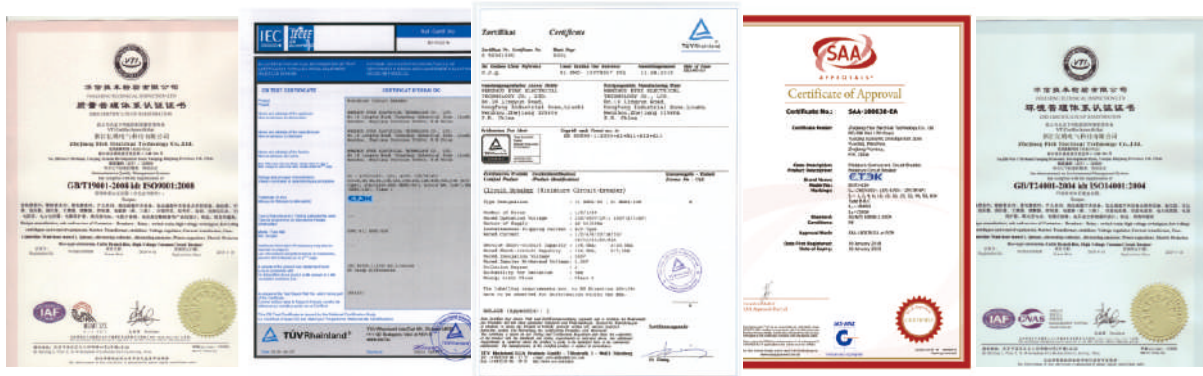
#### Electric Accessories



Item			
Undervoltage release self-suction type	Rated operating voltage	AC230V 50Hz	AC4000V 50Hz
	Operating voltage value	(35%~70%) Ue	
	Voltage value ensures closing	(85%~110%) Ue	
	Voltage value ensures non closing	≤35%Ue	
	Power loss	24VA	
	Actuation time of release, undervoltage instantaneous release	Instantaneous	
Undervoltage release self-suction type	Rated operating voltage Ue	AC230V 50Hz	AC400V 50Hz
	Operating voltage value	(35% -70%)Ue	
	Voltage value ensures closing	(85%~110%)Ue	
	Voltage value ensures non closing	≤35%Ue	
	Power loss	24VA	
	Actuation time of release	Undervoltage instantaneous release	Instantaneous
Undervoltage time-delay release		Delay time 1s, 3s, 5s; if the voltage restores to 85% Ue within 1/2 delay time, the circuit breaker will not be disconnected.	



▶ CERTIFICATE ◀



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