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

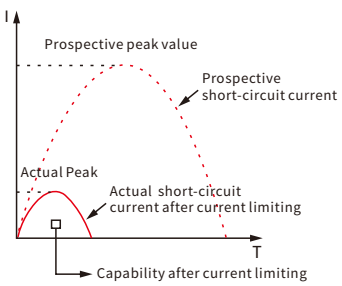
Current-limiting refers to limit of the increase of short-circuit current in the loop, and in the loop protected by EKM8, peak value of the short-circuit current and the I^2t energy in the circuit will be much smaller than the prospective value.

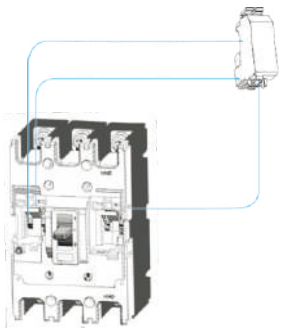
U-shaped static contact

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

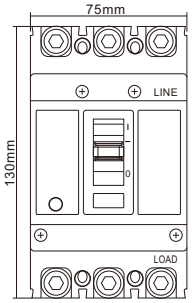




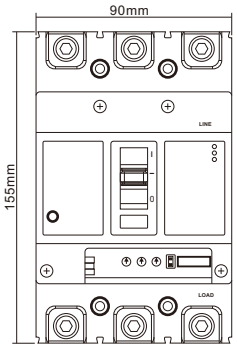
Product Features

Feature 3: Miniaturized frame

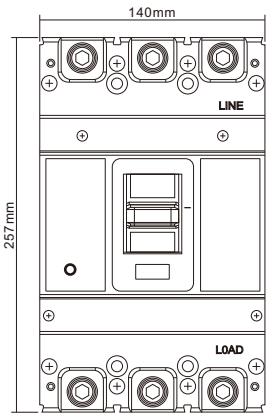
5 frame sizes: 125 type, 160 type, 250 type, 630 type, 800 type
Rated current of EKM8 series 10A~800A



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.

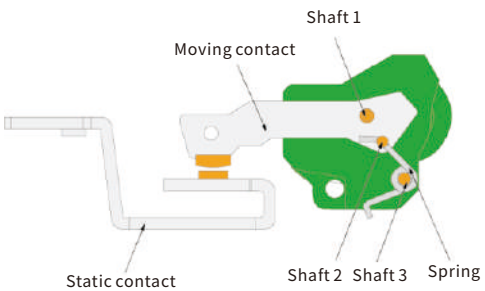


Fig.1

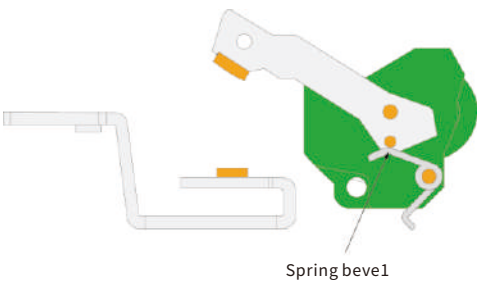
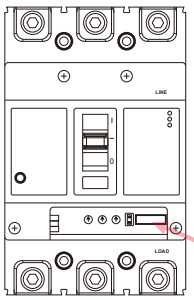


Fig.2 : Status when breaking

Product Features

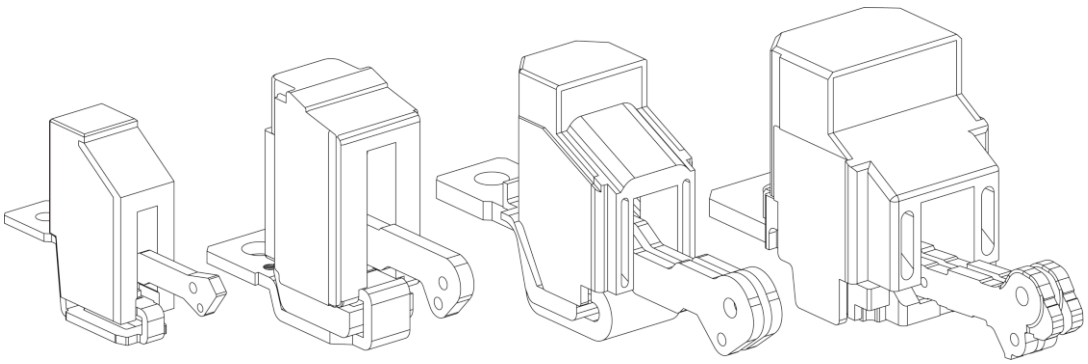
Feature 5: Intelligence

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



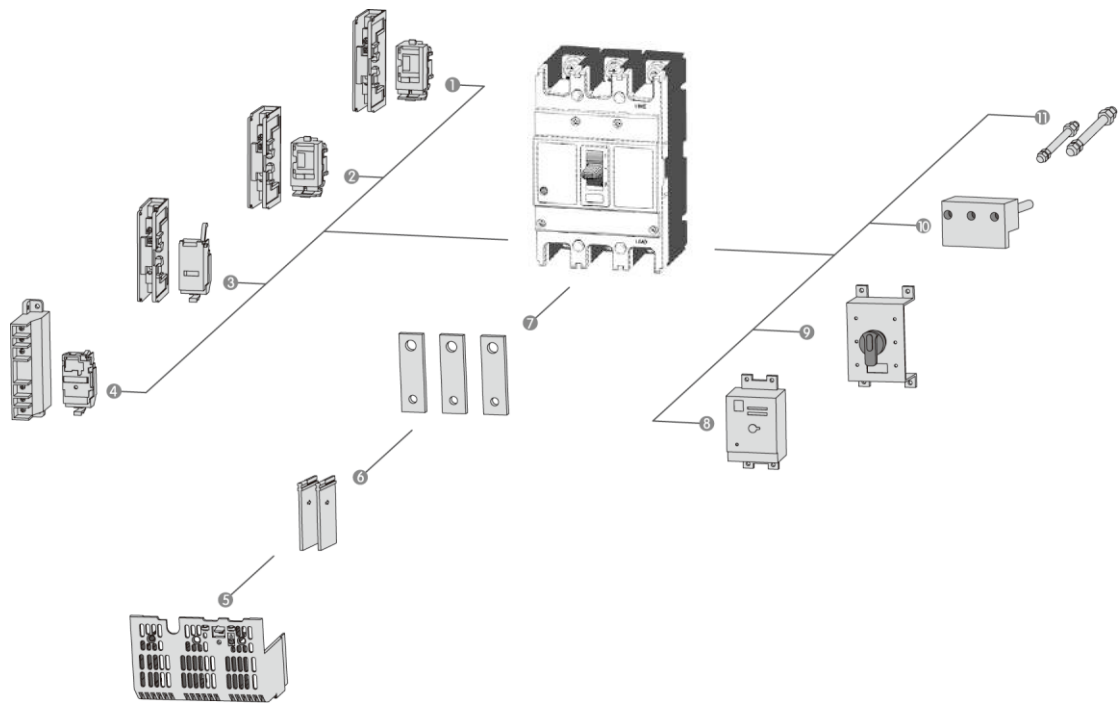
Feature 7: Unification

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℃ to +55℃;
- 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℃.
- 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

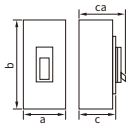
EKM8	125	S	P	4
↓	↓	↓	↓	↓
Product code	Frame size	Current class	Code of control circuit source voltage	Pole number

		C	S	H
Moulded-case circuit breaker	125 160 250 400 630 1250 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	P: electric operation Z: rotary handle W: direct operation	3: 3-pole 4: 4-pole

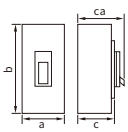
300	125A	2	A
↓	↓	↓	↓
Release type and internal accessory	Rated current (A)	Application	Code of four-pole product
The first digit represents release type 2: Has instantaneous release only 3: Complex release Note: Later two digits are the code of accessories (see accessory table)	125 10, 16, 20, 25, 32, 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		
Q1: AC220V	F1: AC220V	J1: AC125V	D1: AC220V	D5: AC230V	Q: Front-board H: Back-board C: Plug-in type	1: No 2: Yes
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.			

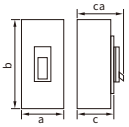
Main Performance Indexes

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			