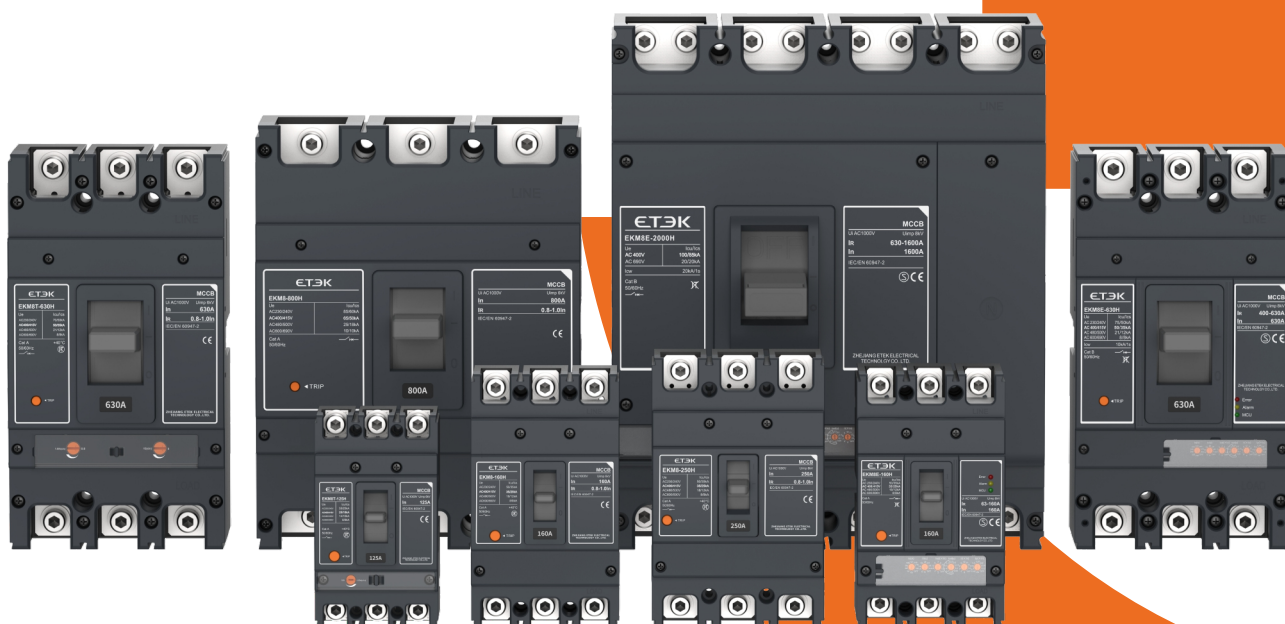


## INDUSTRIAL POWER DISTRIBUTION ELECTRIC

- MCCB
- ACB

» *Always for your safety*



*Always for your safety*



# COMPANY INTRODUCTION

Zhejiang ETEK Electrical Technology Co., Ltd. (Abbreviation: ETEK Electric) is a professional manufacturing company dedicated to the research, development, production, and sales of low-voltage electrical appliances. The company was established in 2011 and is located in Wenzhou City, Zhejiang Province. At present, the company has 40K sqm of modern manufacturing bases in Wenzhou and Wuhu with over 500 employees, including over 50 R&D and technical personnel. ETEK Electric has multiple production workshops for mold design, parts manufacturing, welding, and assembly. Additionally, they have multiple automated production lines for MCB and RCCB. Our products include MCB, RCCB, RCBO, AFDD, MCCB, ACB, EV Chargers, Photovoltaic DC products, etc., which can meet the needs of different countries and are widely used in fields such as residential, commercial, and industrial.

ETEK Electric has passed ISO9001 quality management system and environmental management system certification. The company have built our own low-voltage electrical testing center, and most of the testing items can meet the requirements of international IEC standards, in addition, our products have obtained international CB, TUV, VDE, CE, RoHS and other quality certificates.

ETEK Electric constantly masters and breaks through the core technology of circuit breakers, with more than 100 national patents. Focusing on independent brand construction is crucial for the company's development. The "ETEK" trademark is registered in over 80 countries. Products are exported to over 60 countries and regions including the European Union, South America, the Middle East, Africa, and Southeast Asia.

We also support OEM, ODM, OBM, SKD, CKD and other business cooperation models, and provide customers with a full range of services covering market cultivation, technical training, and factory construction.

ETEK Electric has been adhering to the business policy of "Growth", "Quality", "Efficiency", and "Innovation". In 2023, ETEK Electric has formulated the fifth 3-year strategic plan, which specifies the three major initiatives of expanding the production scale, enhancing the new energy market share, and expanding the independent brand, to realize the annual revenue target of \$50 million by 2026.

Looking forward to the future, ETEK Electric will be committed to becoming a globally renowned manufacturer in the power distribution and electrical industry, safeguarding the power safety of global customers, and helping the development of green and digital energy.



Wenzhou Factory

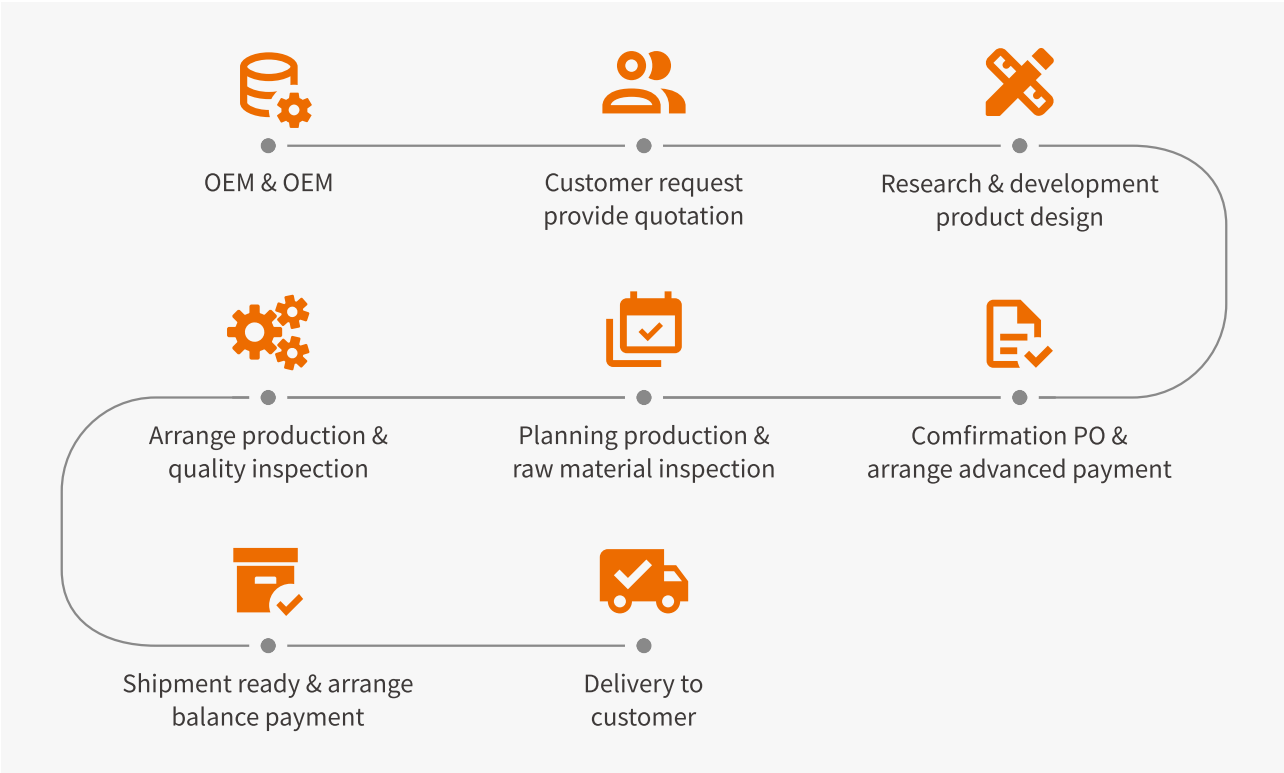


Wuhu Factory

# WORKSHOPS



# OEM & ODM BUSINESS



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# EKM8 MCCB 125AF~2000AF



Thermal Magnetic Fixed MCCB

Standard\_ IEC60947-2

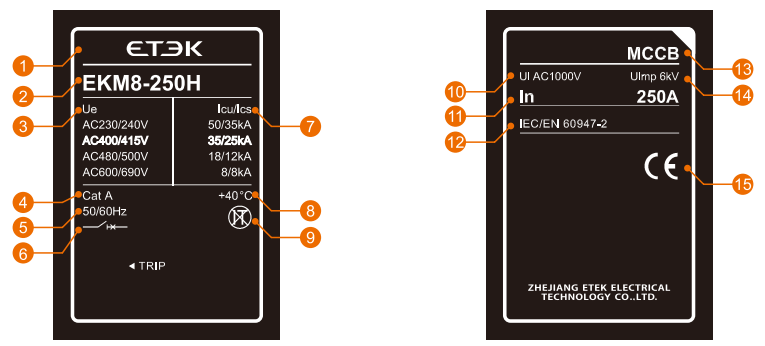


## Product Overview

EKM8 series offers a range of molded case circuit breakers with fixed thermal magnetic trip units, providing both line and motor protection. These MCCB are suitable for use with AC 50Hz, rated voltage of 690V and below, and rated current up to 2000A.

- Frame size: 125A, 160A, 250A, 400A, 630A, 800A, 1250A, 2000A
- Rated operational voltage  $U_e$  (V/AC): 230/400/415/690
- Breaking capacity code: C, S, H
- Number of poles: 1P, 2P, 3P, 4P
- Trip unit type: thermal magnetic type
- Installation method: Fixed type; plug-in type

## Nameplate Interpretation



- ① Company LOGO
- ② Product model
- ③  $U_e$ : Rated operational voltage
- ④ CatA: Utilization category of breaker
- ⑤ Frequency of A.C.
- ⑥ Electrical symbol for circuit breaker with isolating function
- ⑦  $I_{cu}/I_{cs}$ : Ultimate short circuit breaking capacity/Service short circuit breaking capacity
- ⑧ +40°C: Ambient temperature
- ⑨ Not applicable to IT systems
- ⑩  $U_i$ : Rated insulation voltage
- ⑪  $I_n$ : Rated operational current
- ⑫ The product is in conformity with standard IEC/EN 60947.2
- ⑬ Molded Case Circuit Breaker
- ⑭  $U_{imp}$ : Rated impulsive withstand voltage
- ⑮ CE certification

## Comparison Table of Frame Sizes and Rated Current

Rated current(A)	10	16	20	25	32	40	50	63	80	100	125	160	180	200	225	250	315	350	400	500	630	700	800	1000	1250	1500	1600	2000						
125	■																																	
160		■																																
250										■																								
400																	■																	
630																				■														
800																					■													
1250																									■									
2000																											■							

## Comparison Table of Frame size, Number of Poles and Breaking Capacity

Frame size(A)	125				160			250		400		630		800		1250		2000		
Number of poles	1P	2P	3P	4P	2P	3P	4P	3P	4P	3P	4P	3P	4P	3P	4P	3P	4P	3P	4P	
Code of breaking capacity	C	■	■	■	■	■	■	■	■											
	S	■	■	■	■	■	■	■	■											
	H	■	■	■	■		■	■	■	■	■	■	■	■	■	■	■	■	■	■

## Thermal and Magnetic Trip Unit

### Protection

The circuit breaker equipped with TM thermomagnetic release is mainly for protection of the cable, which is on the power distribution system for transformer power supply.

### Overload protection: thermal protection Ir (Fixed)

The overload protection function provides inverse time limit curve on the basis of bimetal. If the limit is exceeded, the deformation of the bimetal can lead in the tripping of the circuit breaker operating mechanism.

Test No.	I/In	Conventional time	Breaker status	Initial status
1	1.05	> 1h(In ≤ 63A) > 2h(In > 63A)	Non-tripping	Cold status
2	1.3	≤ 1h(In ≤ 63A) ≤ 2h(In > 63A)	Tripping	Immediately after test 1

### Short circuit protection: magnetic protection Ii (Fixed)

Magnetic protection achieves short circuit protection through a magnetic trip device. The circuit breaker will trip instantaneously. Ii set at 10In.

Test No.	I	Breaker status	Conventional time
1	80%Ii	Non-tripping	≥0.2s
2	120%Ii	Tripping	≤0.2s

## Magnetic

The circuit breaker equipped with magnetic release is mainly for protection of the motor.

### Short circuit protection: magnetic protection Ii (Fixed)

Magnetic protection achieves short circuit protection through a magnetic trip device. The circuit breaker will trip instantaneously. Ii set at 12In.

Test No.	I	Breaker status	Conventional time
1	80%Ii	Non-tripping	≥0.2s
2	120%Ii	Tripping	≤0.2s

## MCCB Selection Code

Product code	Frame size code	Breaking capacity code	Operation way code ①	Number of poles code	Trip unit type code	Inner accessories code ②
<b>EKM8</b>	<b>- 160</b>	<b>H</b>	<b>P1</b>	<b>/ 4</b>	<b>3</b>	<b>00</b>
EKM8 Series thermal magnetic fixed molded case circuit breaker	125: 125A	C: Basic type	No code: Direct operation	1: 1P	2: Only electromagnetic detent	See accessory table
	160: 160A		P1: DC3 electric operation			
			P2: DC6 series electric operation			
	250: 250A	S: Standard type	ZY1: Turning handle (hand-operated center type-round handle)-(Preferred for conventional factory)	2: 2P		
	400: 400A		ZF1: Turning handle (hand-operated center type-square handle)			
	630: 630A		ZY2: Turning handle (hand-operated eccentric type-round handle)	3: 3P	3: Thermal + Electromagnetic release	
			800: 800A			
	1250: 1250A		H: High breaking type	Z3: Turning handle (Hand-operated one-piece type) (Only available for 125, 160, 250)	4: 4P	
	2000: 2000A					

Note: ① 1P, 2P products have direct operation only.

The voltage of electric operation is divided into: DC24, DC110V, DC220V, AC230V, AC400V; Conventional production is AC230V.

② 125: 1P products without internal accessories;

Conventional factory default is the lead type: wire length 500mm (other lengths need to be customized);

Can be customized terminal type; undervoltage accessories are only terminal type.



Usage code ③	Product with N pole the code is selectable	Additional functionality code	Mounting and wiring options code ④	Protective accessories code ⑤	Rated current
2	B	VI /	P	Z	In=100A
No code: distribution protection	A: There is no over-current protection at pole N and the N pole is always connected.	No code : Conventional products	No designation : Front panel wiring (fixed type)	No code: General products	125: 10,16,20,25,32,40,50,63,80,100,125A
	B: There is no over-current protection at pole N and N-pole operates with other three poles.		P: Coupling row (extended copper row)		160: 16,20,25,32,40,50,63,80,100,125,160A
2: motor protection		C: There is over-current protection at pole N and N-pole operates with other three poles.	V: Low temperature rise model 50K	Z1: Rear connection (fixed type)	Z: Terminal cover
	Z2Q: Plug-in front connection (split type)			400: 250,315,350,400A	
	D: There is over-current protection at pole N and the N pole is always connected.	VI: Low temperature rise model 40K	Z2H: Plug-in rear connection (split type)		630: 400,500,630A
			Z3Q: Plug-in front connection (one-piece)		800: 500,630,700,800A
			Z3H: Plug-in rear connection (one-piece)		1250: 800,1000,1250A
			DF: Draw-out type front connection		2000: 1000,1250,1500,1600,2000A
			DR: Draw-out type rear connection		
			K: Connection frame type		
			JK: Inlet only: Connection frame type		
			CK: Outlet only : Connection frame type		

③ ≤40A 8.5In does not act, 500A action; 700A -2000A no motor protection type.

④ 1P, 2P only connection row, behind the board wiring; 125, 160, 250 no pull-out; 125 no 4P plug-in (split); 1250, 2000 with coupling row only.

⑤ Terminal cover is only available for 3P; 400 and 630 are divided into narrow and long models, and wide and long models, and the default is wide and long models; 125 and 2000 are not available at the moment.

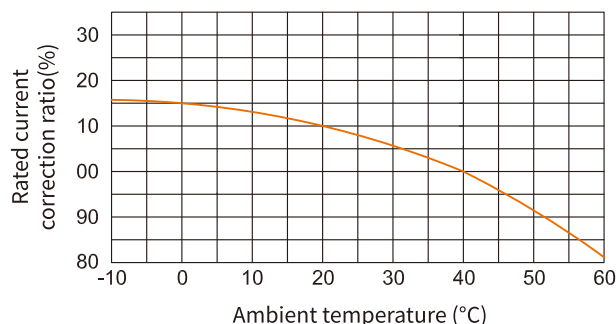
### Technical Parameters

Frame size Inm(A)	125			160			
Rated operational current In(A)	10,16,20,25,32,40,50,63,80,100,125A			16,20,25,32,40,50,63,80,100,125,160A			
Rated insulation voltage Ui(V)	1000V			1000V			
Rated impulse withstand voltage Uimp(kV)	8kA			8kA			
Rated operational voltage Ue(V), AC 50/60Hz	230V(1P); 240V(3P/4P); 400V(2P/3P/4P); 690V(3P/4P)			230V; 400V; 690V			
Breaking capacity code	C	S	H	C	S	H	
Number of poles	1P,2P,3P,4P			2P,3P,4P		3P,4P	
Rated service short circuit breaking capacity Ics (kA)	230/240V	10	18	25	20	28	35
	400/415V	7.5	15	18	10	18	25
	600/690V	3	4	8	4	4	8
Rated ultimate short circuit breaking capacity Icu (kA)	230/240V	15	25	35	30	40	50
	400/415V	10	18	25	15	25	35
	600/690V	5	6	8	6	8	8
Standards	IEC 60947-2			IEC 60947-2			
Utilization category	A			A			
Isolation function	■			■			
Trip unit type	Thermo magnetic			Thermo magnetic			
Mechanical life (times)	8500			8500			
Electrical life (times)	1500			1500			

Poles		1P	2P	3P	4P	2P	3P	4P
Inner accessories	Alarm contact	-	-	■	■	-	■	■
	Shunt release	-	■	■	■	■	■	■
	Shunt release + Alarm contact	-	-	■	■	-	■	■
	Single auxiliary contact	-	■	■	■	■	■	■
	Dual auxiliary contacts	-	■	■	■	■	■	■
	Single auxiliary contact + Alarm contact	-	-	■	■	-	■	■
	Dual auxiliary contacts + Alarm contact	-	-	■	■	-	■	■
	Under voltage release	-	■	■	■	■	■	■
	Under voltage release + Alarm contact	-	-	■	■	-	■	■
	Shunt release + Single auxiliary contact	-	-	■	■	-	■	■
	Shunt release + Dual auxiliary contacts	-	-	■	■	-	■	■
	Shunt release + Auxiliary alarm	-	-	■	■	-	■	■
	Shunt release + Under voltage release	-	-	■	■	-	■	■
	Two sets of single auxiliary contacts	-	-	■	■	-	■	■
	Single auxiliary contact + Dual auxiliary contacts	-	-	■	■	-	■	■
	Two sets of dual auxiliary contacts	-	-	■	■	-	■	■
	Single auxiliary contact + Auxiliary alarm	-	-	■	■	-	■	■
	Dual auxiliary contact + Auxiliary alarm	-	-	■	■	-	■	■
External accessories	Under voltage release + Single auxiliary contact	-	-	■	■	-	■	■
	Under voltage release + Dual auxiliary contact	-	-	■	■	-	■	■
	Under voltage release + Auxiliary alarm	-	-	■	■	-	■	■
	Motor-driven mechanism	-	-	■	■	-	■	■
	Manual operational mechanism	-	-	■	■	-	■	■
	Extended copper row	■	■	■	■	■	■	■
	Mechanical interlocking	-	-	■	■	-	■	■
	Plug-in front connection split type	-	-	■	■	-	■	■
	Plug-in front connection one-piece	-	-	■	■	-	■	■
	Plug-in front connection fixed type	-	-	■	■	-	■	■
External accessories	Plug-in rear connection split type	-	-	■	■	-	■	■
	Plug-in rear connection one-piece	-	-	■	■	-	■	■
	Plug-in rear connection fixed type	-	-	■	■	-	■	■
	Draw-out type rear connection	-	-	-	-	-	-	-



## Current-Temperature Characteristics



## Derating of Temperature

Frame size	Ambient temperature (40°C product)														
	-10°C	-5°C	0°C	5°C	10°C	15°C	20°C	25°C	30°C	35°C	40°C	45°C	50°C	55°C	60°C
EKM8-125	1.18	1.15	1.15	1.1	1.08	1.06	1.04	1.03	1.02	1.01	1	0.977	0.957	0.936	0.915
EKM8-160	1.22	1.2	1.15	1.14	1.12	1.09	1.07	1.05	1.03	1.01	1	0.977	0.957	0.936	0.915
EKM8-250	1.2	1.18	1.15	1.13	1.11	1.09	1.08	1.07	1.05	1.02	1	0.985	0.968	0.952	0.935
EKM8-400	1.4	1.35	1.3	1.22	1.18	1.13	1.09	1.06	1.04	1.02	1	0.985	0.968	0.952	0.935
EKM8-630	1.2	1.18	1.13	1.11	1.09	1.08	1.07	1.05	1.03	1.01	1	0.985	0.968	0.952	0.935
EKM8-800	1.25	1.23	1.18	1.15	1.13	1.1	1.07	1.05	1.03	1.02	1	0.978	0.957	0.936	0.915
EKM8-1250	1.25	1.21	1.2	1.15	1.13	1.1	1.08	1.06	1.04	1.02	1	0.978	0.957	0.936	0.915
EKM8-1600	1.18	1.15	1.12	1.15	1.13	1.1	1.08	1.06	1.04	1.02	1	0.978	0.957	0.936	0.915

Note: When the ambient temperature is below 40°C, the product can be used normally, with no derating capacity.

## Derating of Altitude

Altitude (m)	2000	2500	3000	4000	4500	5000
Power frequency withstand voltage (V)	2500	2500	2250	1950	1775	1625
Insulation voltage (V)	1000	1000	900	780	710	650
Maximum operationnal voltage (V)	400	400	350	312	284	260
Correction coefficient of operating current (In)	1	1	0.98	0.95	0.92	0.9

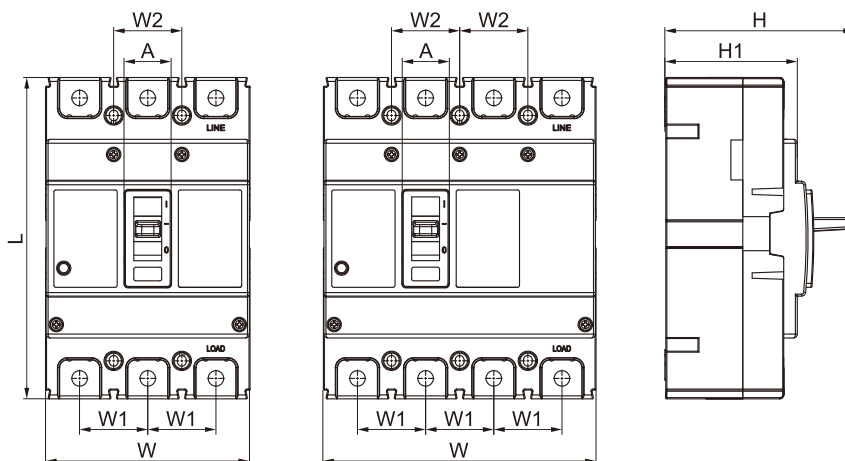
# EKM8 MCCB 125AF~2000AF



Thermal Magnetic Fixed MCCB

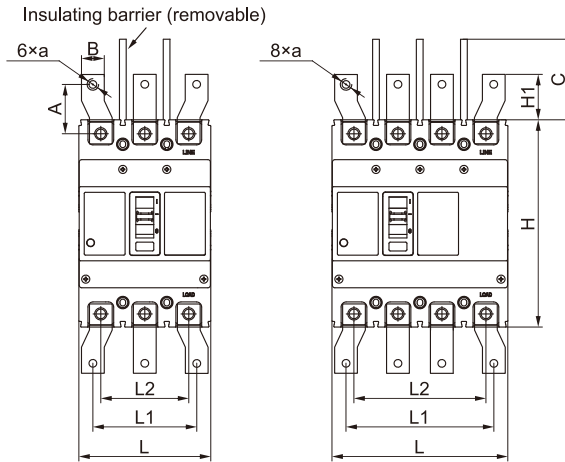
Standard\_ IEC60947-2

## Overall Dimension (mm)



Product type	Poles	W	L	H	H1	W1	W2	A
EKM8-125	1	25	130	94.5	68	25	25	24
	2	50	130	94.5	68	25	25	24
	3	75	130	94.5	68	25	25	24
	4	100	130	94.5	68	25	25	24
EKM8-160	2	60	155	94(S)/108(H)	68(S)/82(H)	30	30	25
	3	90	155	94(S)/108(H)	68(S)/82(H)	30	30	25
	4	120	155	94(S)/108(H)	68(S)/82(H)	30	30	25
EKM8-250	3	105	165	96(S)/116(H)	68(S)/88(H)	35	35	24.4
	4	140	165	96(S)/116(H)	68(S)/88(H)	35	35	24.4
EKM8-400/630	3	140	257	152	103	44	44	51
	4	184	257	152	103	44	44	51
EKM8-800	3	210	275.5	152	103	70	70	58
	4	280	275.5	152	103	70	70	58
EKM8-1250	3	210	275.5	152	103	70	70	58
	4	280	275.5	152	103	70	70	58
EKM8-2000	3	210	340	244	141	70	70	78
	4	280	340	244	141	70	70	78

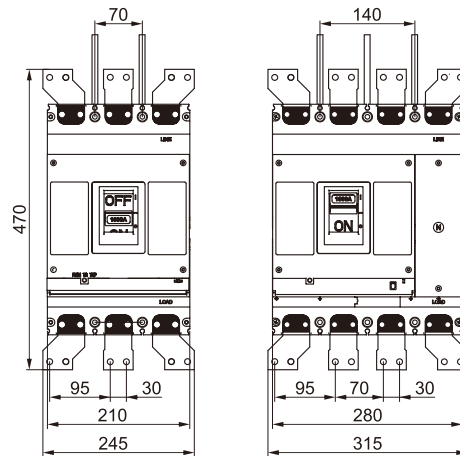
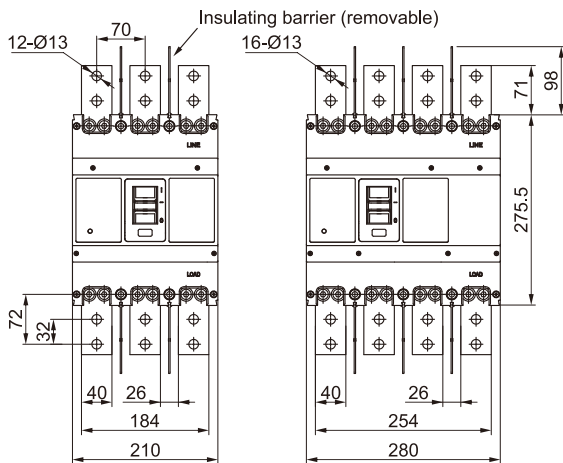
## Front Connection Installation Dimension (mm)



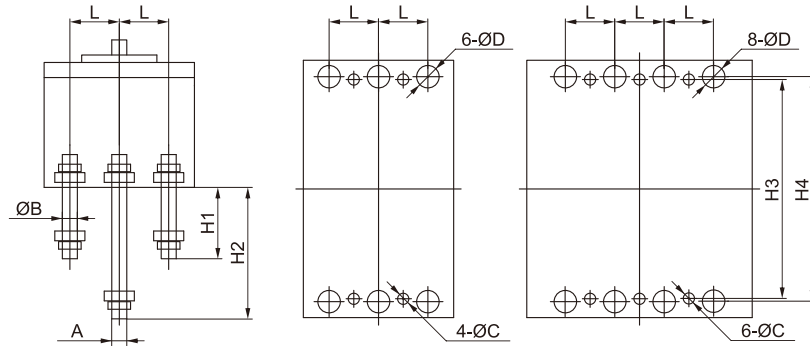
Product type	Poles	L	L1	L2	H	H1	A	B	C	a
EKM8-125	3	75	68	50	130	24	24.5	15	48	M8
	4	100	93	75	130	24	24.5	15	48	M8
EKM8-160	3	90	78	60	155	21.8	24.5	15	48(S)/64(H)	M8
	4	120	108	90	155	21.8	24.5	15	48(S)/64(H)	M8
EKM8-250	3	105	84	70	165	41.8	43.5	20	48(S)/64(H)	M8
	4	140	119	105	165	41.8	43.5	20	48(S)/64(H)	M8
EKM8-400/630	3	140	111	87	257	45.4	43	28	98	Ø14
	4	184	155	131	257	45.4	43	28	98	Ø14
EKM8-800	3	210	160	140	275.5	50.5	53	40	98	Ø13
	4	280	230	210	275.5	50.5	53	40	98	Ø13

EKM8-1250

EKM8-2000

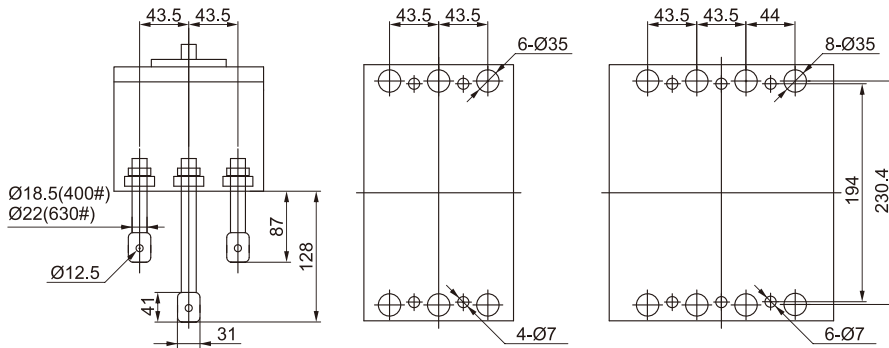


## Rear Connection Installation Dimension (mm)

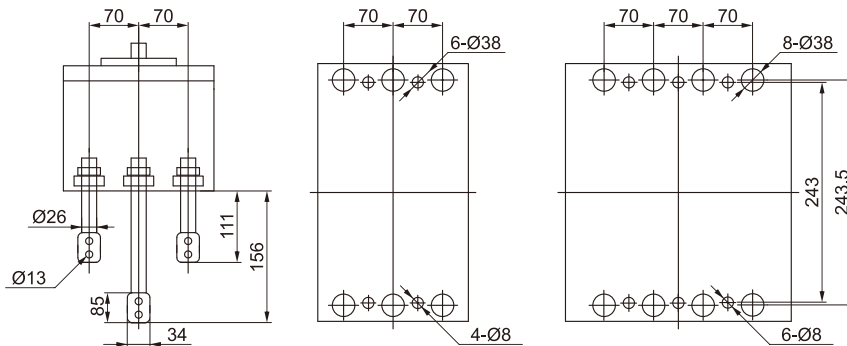


Product type	L	H1	H2	H3	H4	A	B	C	D
EKM8-125	25	51	81	110	114	M8	10	4.5	13
EKM8-160	30	49	94	132	134	M8	12	4.5	15
EKM8-250	35	82	121	126	144	M12	12	4.5	15

### EKM8-400/630

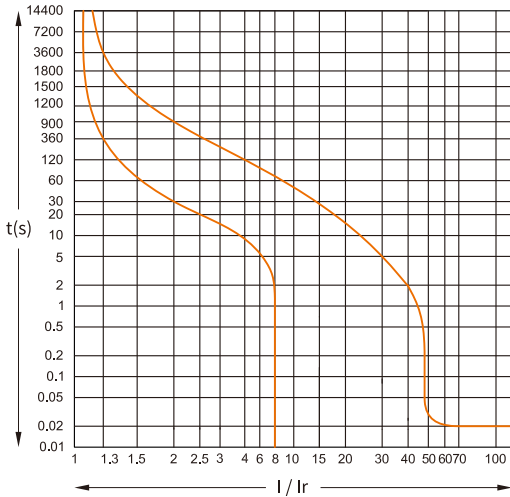


### EKM8-800

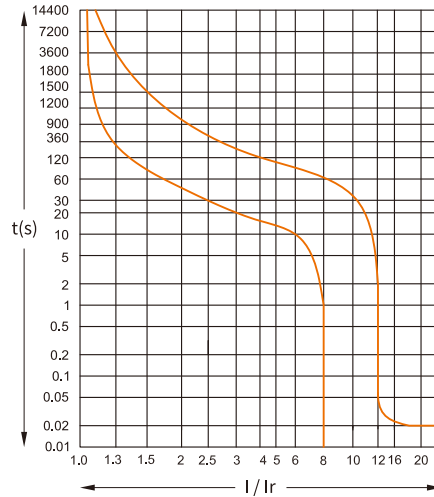


## Tripping Characteristic Curve

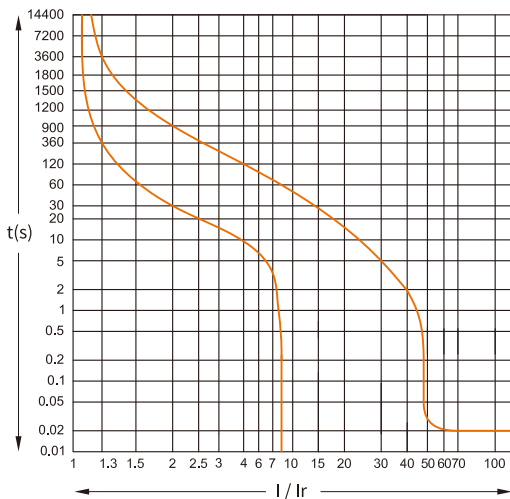
EKM8-125 (10-50A)



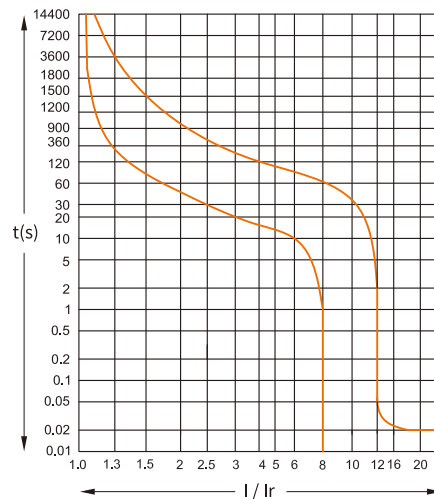
EKM8-125 (63-125A)



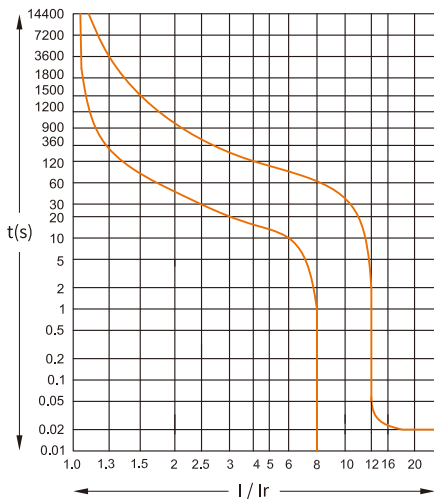
EKM8-160 (10-50A)



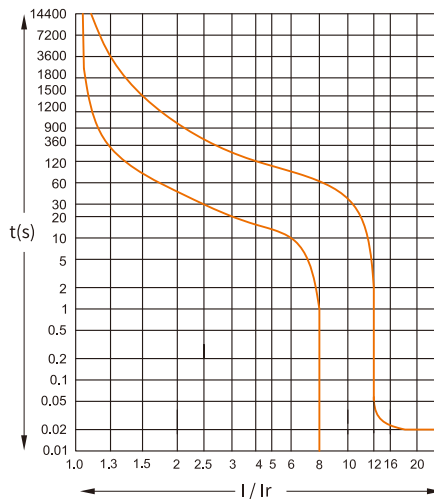
EKM8-160 (63-160A)



EKM8-250



EKM8-400



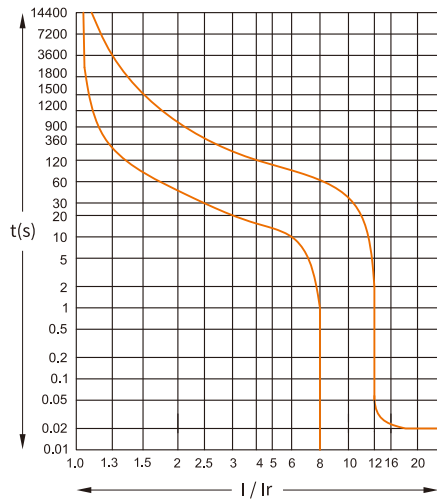


# EKM8 MCCB 125AF~2000AF

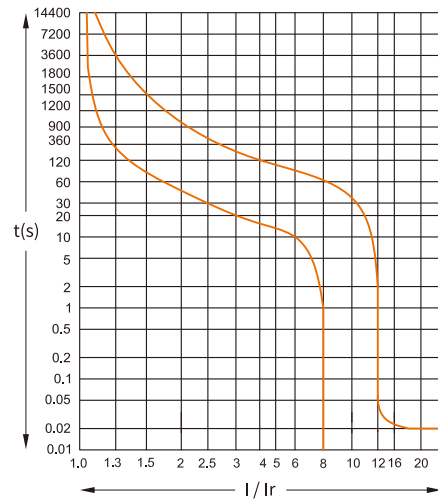


Thermal Magnetic Fixed MCCB ----- Standard\_ IEC60947-2

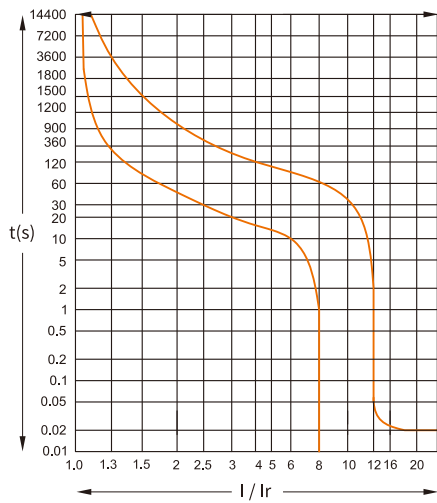
EKM8-630



EKM8-800



EKM8-1250/2000



# EKM8T MCCB 125AF~1250AF

ETEK®

Thermo-Magnetic Double Adjustable Type MCCB

Standard\_ IEC60947-2

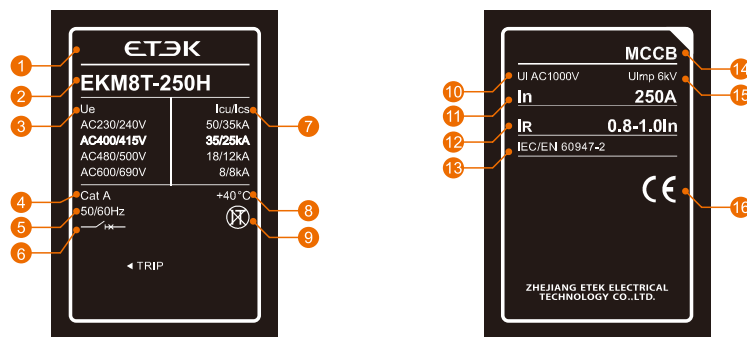


## Product Overview

EKM8T series range of molded case circuit breakers with adjustable thermal magnetic trip unit. These breakers provide line protection and motor protection. These MCCB are suitable for use with AC 50Hz, rated voltage of 690V and below, and rated current up to 1250A.

- Frame size: 125A, 160A, 250A, 400A, 630A, 800A, 1250A
- Rated operational voltage  $U_e$  (V/AC): 230/400/415/690
- Breaking capacity code: C, S, H
- Number of poles: 3P, 4P
- Trip unit type: thermal magnetic type
- Installation method: Fixed type; plug-in type
- Thermal adjustable range  $(0.8\sim 1)I_n$ , magnetic adjustable range  $(5\sim 10)I_n$

## Nameplate Interpretation



- 1 Company LOGO
- 2 Product model
- 3  $U_e$ : Rated operational voltage
- 4 Cat A: Utilization category of breaker
- 5 Frequency of A.C.
- 6 Electrical symbol for circuit breaker with isolating function
- 7  $I_{cu}/I_{cs}$ : Ultimate short circuit breaking capacity/Service short circuit breaking capacity
- 8 +40°C: Ambient temperature
- 9 Not applicable to IT systems
- 10  $U_i$ : Rated insulation voltage
- 11  $I_n$ : Rated operational current
- 12 IR: Long-time-delay setting current range
- 13 The product is in conformity with standard IEC/EN 60947.2
- 14 Molded Case Circuit Breaker
- 15 Uimp: Rated impulsive withstand voltage
- 16 CE certification

## Comparison Table of Frame Sizes and Rated Current

Rated current(A)	20	25	32	40	50	63	80	100	125	160	180	200	225	250	315	350	400	500	630	700	800	1000	1250	
125																								
160																								
250																								
400																								
630																								
800																								
1250																								

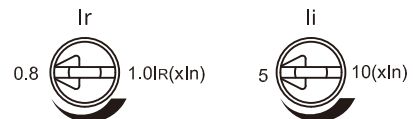
## Comparison Table of Frame size, Number of Poles and Breaking Capacity

Frame size(A)	125		160		250		400		630		800		1250	
Number of poles	3P	4P	3P	4P	3P	4P	3P	4P	3P	4P	3P	4P	3P	4P
Code of breaking capacity	C	■	■	■	■	■	■							
	S	■	■	■	■	■	■							
	H	■	■	■	■	■	■	■	■	■	■	■	■	■

## Thermal and Magnetic

### Protection

The circuit breaker equipped with TM thermomagnetic release is mainly for protection of the cable, which is on the power distribution system for transformer power supply.



### Overload protection: thermal protection Ir (Adjustable)

The overload protection function provides inverse time limit curve on the basis of bimetal. If the limit is exceeded, the deformation of the bimetal can lead in the tripping of the circuit breaker operating mechanism.

Thermal adjustable range: 0.8~1.0In

Test No.	I/In	Conventional time	Breaker status	Initial status
1	1.05	> 1h(In ≤ 63A) > 2h(In > 63A)	Non-tripping	Cold status
2	1.3	≤ 1h(In ≤ 63A) ≤ 2h(In > 63A)	Tripping	Immediately after test 1

Note: For 160A breaker, rated current is under 50A, only have thermal adjustable breaker.

### Short circuit protection: magnetic protection li (Adjustable)

Magnetic protection achieves short circuit protection through a magnetic trip device. The circuit breaker will trip instantaneously.

Magnetic adjustable range: 5~10In

Test No.	I	Breaker status	Conventional time
1	90%li	Non-tripping	≥ 0.2s
2	120%li	Tripping	≤ 0.2s

# EKM8T MCCB 125AF~1250AF



Thermo-Magnetic Double Adjustable Type MCCB ----- Standard\_ IEC60947-2

## MCCB Selection Code

Product code	Frame size code	Breaking capacity code	Operation way code ①	Number of poles code	Trip unit type code
<b>EKM8T</b>	<b>- 160</b>	<b>H</b>	<b>P1</b>	<b>/ 4</b>	<b>3</b>
EKM8T Series thermal magnetic double adjustable type MCCB	125: 125A (Only available for EKM8T/A)	C: Basic type	No code: Direct operation	3: 3P	3: Thermal + Electromagnetic release
	160: 160A		P1: DC3 electric operation		
			P2: DC6 series electric operation		
	250: 250A	S: Standard type	ZY1: Turning handle (hand-operated center type-round handle)-(Preferred for conventional factory)		
	400: 400A		ZF1: Turning handle (hand-operated center type-square handle)		
	630: 630A		ZY2: Turning handle (hand-operated eccentric type-round handle)		
	800: 800A		ZF2: Turning handle (hand-operated eccentric type-square handle)		
1250: 1250A	H: High breaking type	Z3: Turning handle (Hand-operated one-piece type) (Only available for 125, 160, 250)	4: 4P		

Note: ① The voltage of electric operation is divided into: DC24, DC110V, DC220V, AC230V, AC400V; Conventional production is AC230V.

Inner accessories code ②	Product with N pole the code is selectable	Mounting and wiring options code ③	Protective accessories code ④	Rated current	
00	B	/ P	Z	In=100A	
See accessory table	A: There is no over-current protection at pole N and the N pole is always connected.	No designation : Front panel wiring (fixed)	No code: General products	125: 20,25,32,40,50,63, 80,100,125A	
		P: Coupling row (extended copper row)		160: 20,25,32,40,50,63, 80,100,125,160A	
	B: There is no over-current protection at pole N and N-pole operates with other three poles.	Z1: Rear connection (fixed type)		250: 160,180,200,225, 250A	
		Z2Q: Plug-in front connection (split type)		400: 315,350,400A	
		Z2H: Plug-in rear connection (split type)		Z: Terminal cover	
	C: There is over-current protection at pole N and N-pole operates with other three poles.	Z3Q: Plug-in front connection (one-piece)			630: 320,350,400,500, 630A
		Z3H: Plug-in rear connection (one-piece)			800: 630,700,800A
	D: There is over-current protection at pole N and the N pole is always connected.	DF: Draw-out type front connection		1250: 630,700,800, 1000,1250A	
		DR: Draw-out type rear connection			

② Conventional factory default is the lead type: wire length 500mm (other lengths need to be customized);

Can be customized terminal type; undervoltage accessories are only terminal type.

③ 125, 160, 250 no pull-out; 1250, 2000 with coupling row only.

④ Terminal cover is only available for 3P;

400 and 630 are divided into narrow and long models, and wide and long models, and the default is wide and long models.

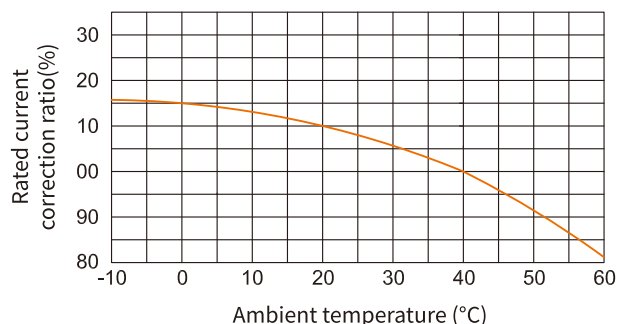
### Technical Parameters

Frame size Inm(A)		125			160		
Rated operational current In(A)		20,25,32,40,50,63,80,100,125A			20,25,32,40,50,63,80,100,125,160A		
Rated insulation voltage Ui(V)		1000V			1000V		
Rated impulse withstand voltage Uimp(kV)		8kA			8kA		
Rated operational voltage Ue(V), AC 50/60Hz		400V			400V		
Breaking capacity code		C	S	H	C	S	H
Number of poles		3P,4P			3P,4P		
Rated service short circuit breaking capacity Ics (kA)	230/240V	10	18	25	20	28	35
	400/415V	7.5	15	18	10	18	25
	600/690V	3	4	8	4	4	8
Rated ultimate short circuit breaking capacity Icu (kA)	230/240V	15	25	35	30	40	50
	400/415V	10	18	25	15	25	35
	600/690V	5	6	8	6	8	8
Standards		IEC 60947-2			IEC 60947-2		
Utilization category		A			A		
Isolation function		■			■		
Trip unit type		Thermo magnetic			Thermo magnetic		
Mechanical life (times)		8500			8500		
Electrical life (times)		1500			1500		

Poles		3P	4P	3P	4P
Inner accessories	Alarm contact	■	■	■	■
	Shunt release	■	■	■	■
	Shunt release + Alarm contact	■	■	■	■
	Single auxiliary contact	■	■	■	■
	Dual auxiliary contacts	■	■	■	■
	Single auxiliary contact + Alarm contact	■	■	■	■
	Dual auxiliary contacts + Alarm contact	■	■	■	■
	Under voltage release	■	■	■	■
	Under voltage release + Alarm contact	■	■	■	■
	Shunt release + Single auxiliary contact	■	■	■	■
	Shunt release + Dual auxiliary contacts	■	■	■	■
	Shunt release + Auxiliary alarm	■	■	■	■
	Shunt release + Under voltage release	■	■	■	■
	Two sets of single auxiliary contacts	■	■	■	■
	Single auxiliary contact + Dual auxiliary contacts	■	■	■	■
	Two sets of dual auxiliary contacts	■	■	■	■
	Single auxiliary contact + Auxiliary alarm	■	■	■	■
	Dual auxiliary contact + Auxiliary alarm	■	■	■	■
Under voltage release + Single auxiliary contact	■	■	■	■	
Under voltage release + Dual auxiliary contact	■	■	■	■	
Under voltage release + Auxiliary alarm	■	■	■	■	
External accessories	Motor-driven mechanism	■	■	■	■
	Manual operational mechanism	■	■	■	■
	Extended copper row	■	■	■	■
	Mechanical interlocking	■	■	■	■
	Plug-in front connection split type	■	■	■	■
	Plug-in front connection one-piece	■	■	■	■
	Plug-in front connection fixed type	■	■	■	■
	Plug-in rear connection split type	■	■	■	■
Plug-in rear connection one-piece	■	■	■	■	
Plug-in rear connection fixed type	■	■	■	■	
Draw-out type rear connection	-	-	-	-	



## Current-Temperature Characteristics



## Derating of Temperature

Frame size	Ambient temperature (40°C product)														
	-10°C	-5°C	0°C	5°C	10°C	15°C	20°C	25°C	30°C	35°C	40°C	45°C	50°C	55°C	60°C
EKM8T-160	1.22	1.2	1.15	1.14	1.12	1.09	1.07	1.05	1.03	1.01	1	0.977	0.957	0.936	0.915
EKM8T-250	1.2	1.18	1.15	1.13	1.11	1.09	1.08	1.07	1.05	1.02	1	0.985	0.968	0.952	0.935
EKM8T-400	1.4	1.35	1.3	1.22	1.18	1.13	1.09	1.06	1.04	1.02	1	0.985	0.968	0.952	0.935
EKM8T-630	1.2	1.18	1.13	1.11	1.09	1.08	1.07	1.05	1.03	1.01	1	0.985	0.968	0.952	0.935
EKM8T-800	1.25	1.23	1.18	1.15	1.13	1.1	1.07	1.05	1.03	1.02	1	0.978	0.957	0.936	0.915
EKM8T-1250	1.25	1.21	1.2	1.15	1.13	1.1	1.08	1.06	1.04	1.02	1	0.978	0.957	0.936	0.915

Note: When the ambient temperature is below 40°C, the product can be used normally, with no derating capacity.

## Derating of Altitude

Altitude (m)	2000	2500	3000	4000	4500	5000
Power frequency withstand voltage (V)	2500	2500	2250	1950	1775	1625
Insulation voltage (V)	1000	1000	900	780	710	650
Maximum operationnal voltage (V)	400	400	350	312	284	260
Correction coefficient of operating current (In)	1	1	0.98	0.95	0.92	0.9



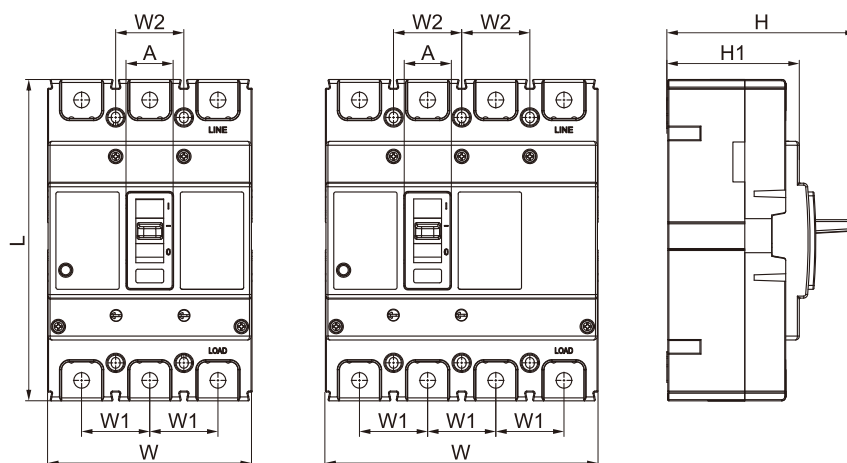
# EKM8T MCCB 125AF~1250AF



Thermo-Magnetic Double Adjustable Type MCCB

Standard\_ IEC60947-2

## Overall Dimension (mm)



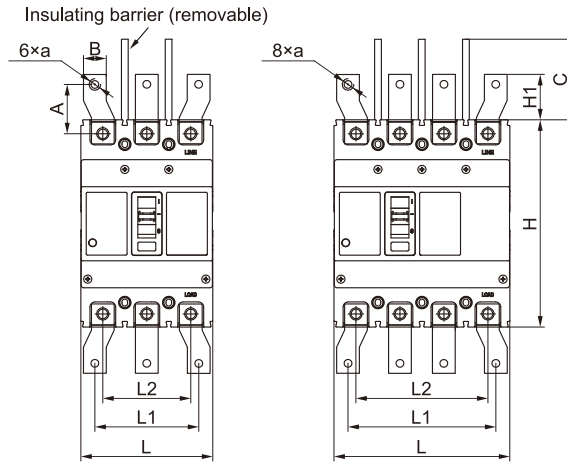
Product type	Poles	W	L	H	H1	W1	W2	A
EKM8T-125	3	75	130	94.5	68	25	25	24
	4	100	130	94.5	68	25	25	24
EKM8T-160	3	90	155	94(S)/108(H)	68(S)/82(H)	30	30	25
	4	120	155	94(S)/108(H)	68(S)/82(H)	30	30	25
EKM8T-250	3	105	165	96(S)/116(H)	68(S)/88(H)	35	35	24.4
	4	140	165	96(S)/116(H)	68(S)/88(H)	35	35	24.4
EKM8T-400/630	3	140	257	152	103	44	44	51
	4	184	257	152	103	44	44	51
EKM8T-800	3	210	275.5	152	103	70	70	58
	4	280	275.5	152	103	70	70	58
EKM8T-1250	3	210	275.5	152	103	70	70	58
	4	280	275.5	152	103	70	70	58

# EKM8T MCCB 125AF~1250AF



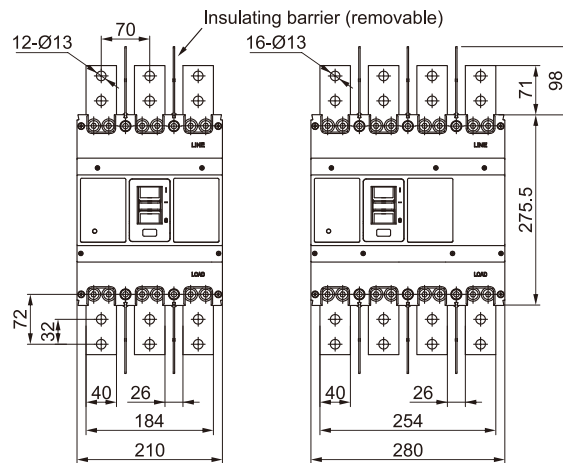
Thermo-Magnetic Double Adjustable Type MCCB ----- Standard\_ IEC60947-2

## Front Connection Installation Dimension (mm)



Product type	Poles	L	L1	L2	H	H1	A	B	C	a
EKM8T-125	3	75	68	50	130	24	24.5	15	48	M8
	4	100	93	75	130	24	24.5	15	48	M8
EKM8T-160	3	90	78	60	155	21.8	24.5	15	48(S)/64(H)	M8
	4	120	108	90	155	21.8	24.5	15	48(S)/64(H)	M8
EKM8T-250	3	105	84	70	165	41.8	43.5	20	48(S)/64(H)	M8
	4	140	119	105	165	41.8	43.5	20	48(S)/64(H)	M8
EKM8T-400/630	3	140	111	87	257	45.4	43	28	98	Ø14
	4	184	155	131	257	45.4	43	28	98	Ø14
EKM8T-800	3	210	160	140	275.5	50.5	53	40	98	Ø13
	4	280	230	210	275.5	50.5	53	40	98	Ø13

### EKM8T-1250

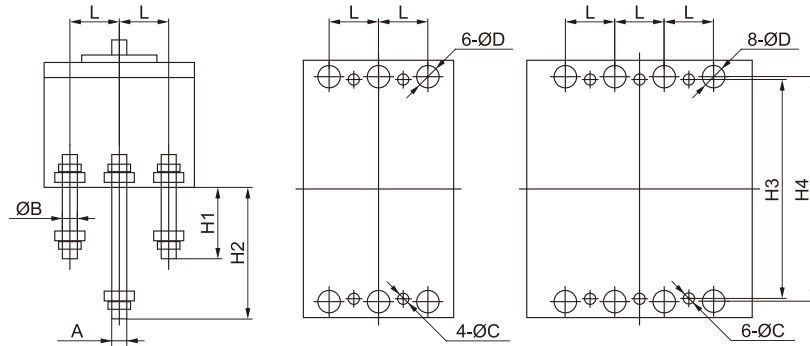


# EKM8T MCCB 125AF~1250AF



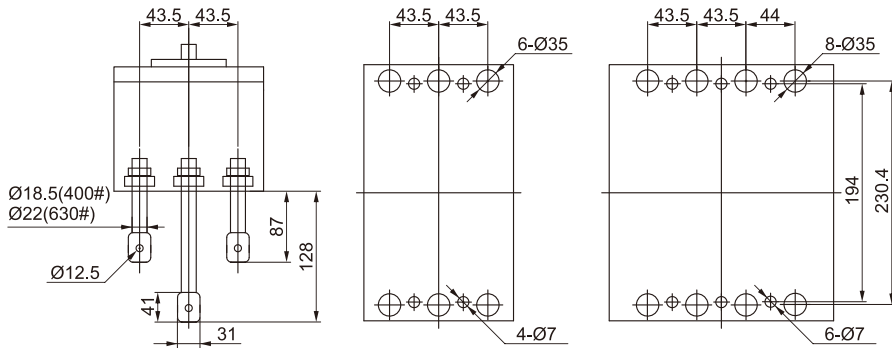
Thermo-Magnetic Double Adjustable Type MCCB ----- Standard\_ IEC60947-2

## Rear Connection Installation Dimension (mm)

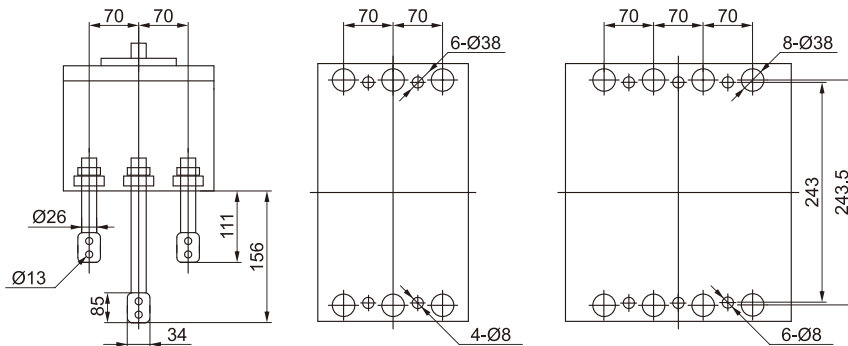


Product type	L	H1	H2	H3	H4	A	B	C	D
EKM8T-125	25	51	81	110	114	8	10	4.5	13
EKM8T-160	30	49	94	132	134	8	12	4.5	15
EKM8T-250	35	82	121	126	144	12	12	4.5	15

### EKM8T-400/630

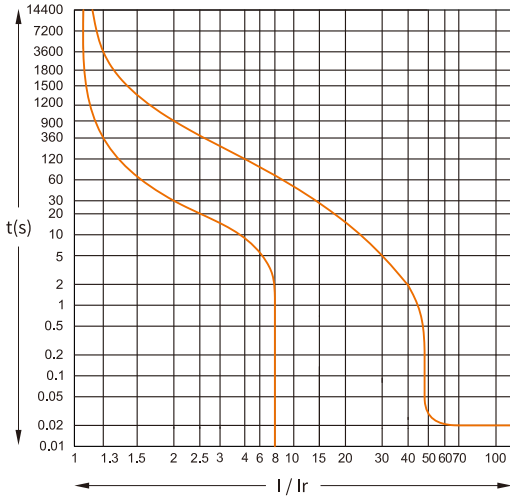


### EKM8T-800

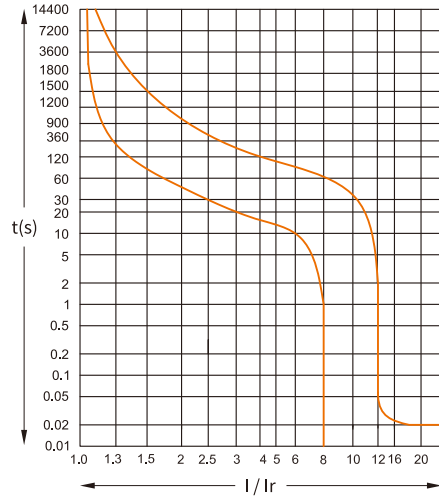


## Tripping Characteristic Curve

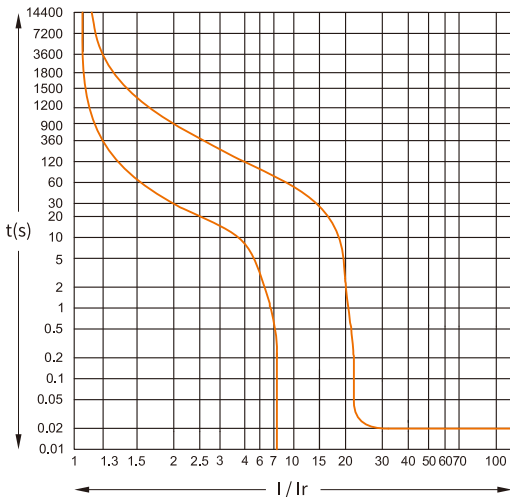
EKM8T-125 (10-50A)



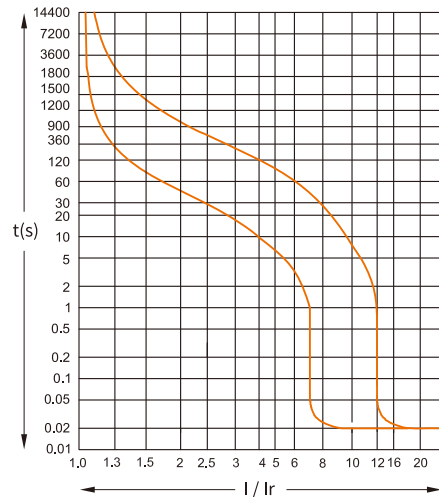
EKM8T-125 (63-125A)



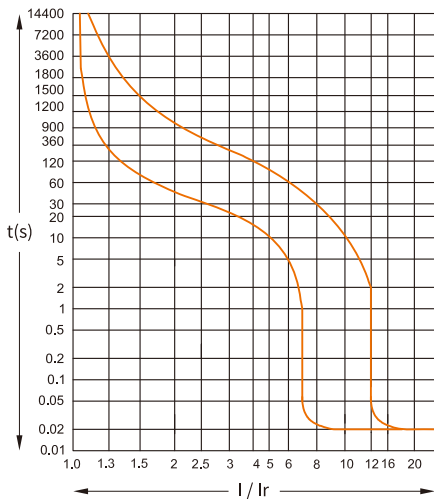
EKM8T-160 (25-63A)



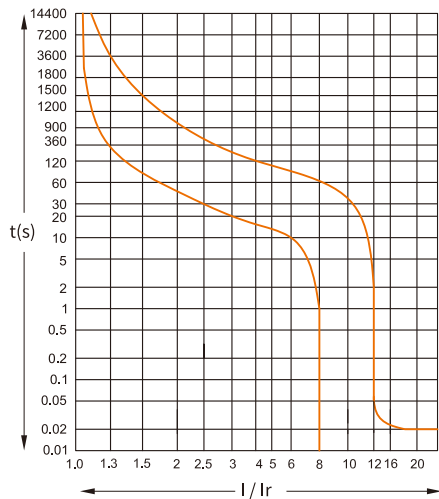
EKM8T-160 (80-160A)



EKM8T-250



EKM8T-400

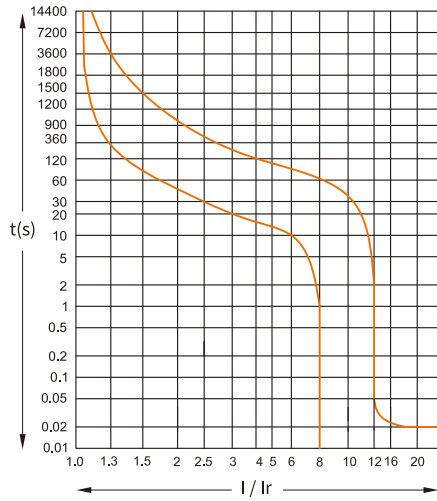


# EKM8T MCCB 125AF~1250AF

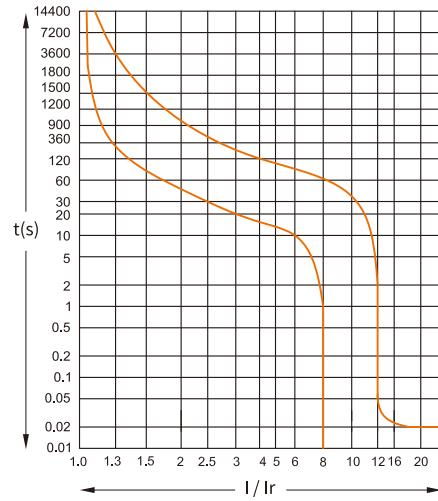


Thermo-Magnetic Double Adjustable Type MCCB ----- Standard\_ IEC60947-2

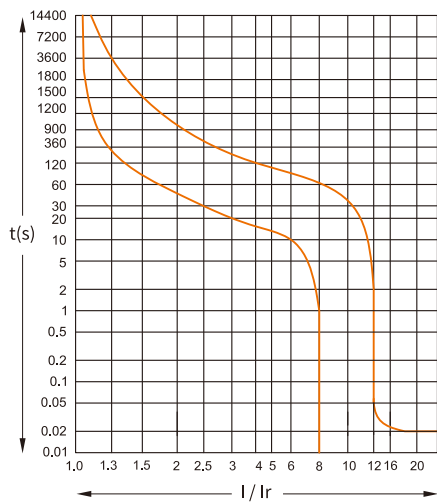
EKM8T-630



EKM8T-800



EKM8T-1250



# EKM8E MCCB 160AF~2000AF



Electronic Adjustable Type MCCB

Standard\_ IEC60947-2



EKM8E-160H 3P

EKM8E-250H 3P

EKM8E-400H 3P

EKM8E-1250H 3P

## Product Overview

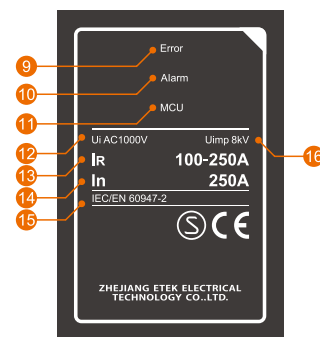
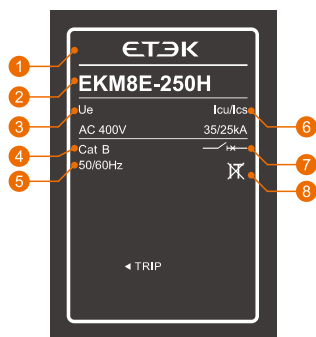
EKM8E series offers a range of MCCBs with electronic type trip unit, providing LSI\* protection. These MCCB are suitable for use with AC 50Hz, rated voltage of 690V and below, and rated current up to 2000A.

Electronic trip units in comparison with thermomagnetic trip units, they allow a more precise setting both in terms of trip times as well as in terms of current thresholds to meet the installation requirements better.

- Frame size: 160A, 250A, 400A, 630A, 800A, 1250A, 1600A, 2000A
- Rated operational voltage  $U_e$  (V/AC): 230/400/415/690
- Breaking capacity code: S, H
- Number of poles: 3P, 4P
- Trip unit type: electronic type
- Installation method: Fixed type; plug-in type

\*Note: Function L (Long time delay) setup current and time delay; Function S (Short time delay) setup current and time delay; Function I (Instantaneous) setup current without delay.

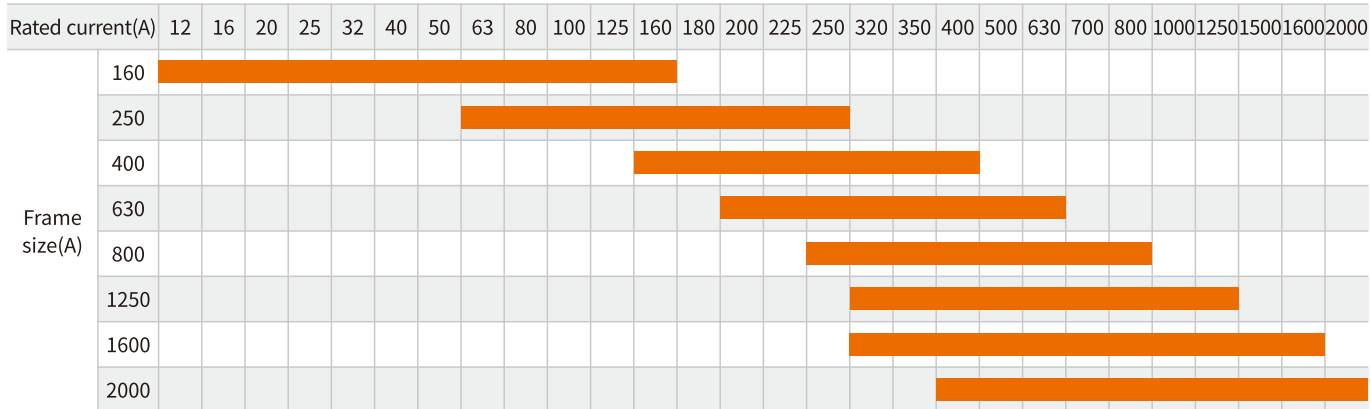
## Nameplate Interpretation



- 1 Company LOGO
- 2 Product model
- 3  $U_e$ : Rated operational voltage
- 4 CatA: Utilization category of breaker
- 5 Frequency of A.C.
- 6  $I_{cu}/I_{cs}$ : Ultimate short circuit breaking capacity/Service short circuit breaking capacity
- 7 Electrical symbol for circuit breaker with isolating function
- 8 Not applicable to IT systems

- 9 Error: Fault
- 10 Alarm: Alarm
- 11 MCU: Run
- 12  $U_i$ : Rated insulation voltage
- 13 IR: Long-time-delay setting current range
- 14 In: Rated operational current
- 15 The product is in conformity with standard IEC/EN 60947.2
- 16 Uimp: Rated impulsive withstand voltage

### Comparison Table of Frame Sizes and Rated Current



### Comparison Table of Frame size, Number of Poles and Breaking Capacity

Frame size(A)		160		250		400		630		800		1250		2000	
Number of poles		3P	4P	3P	4P	3P	4P	3P	4P	3P	4P	3P	4P	3P	4P
Code of breaking capacity	S	■	■	■	■										
	H	■	■	■	■	■	■	■	■	■	■	■	■	■	■

## MCCB Selection Code

Product code	Frame size code	Breaking capacity code	Operation way code ①	Number of poles code	Knob code	Inner accessories code ②
<b>EKM8E -</b>	<b>160</b>	<b>H</b>	<b>P1</b>	<b>/ 4</b>	<b>3</b>	<b>00</b>
EKM8E Series electronic adjustable type MCCB	160: 160A	S: Standard type	No code: Direct operation	3: 3P	3: 3 knob	See accessory table
	250: 250A		P1: DC3 electric operation			
	400: 400A		P2: DC6 series electric operation			
	630: 630A		ZY1: Turning handle (hand-operated center type-round handle)-(Preferred for conventional factory)			
	800: 800A		ZF1: Turning handle (hand-operated center type-square handle)			
	1250: 1250A	H: High breaking type	4: 4P	6: 6 knob		
	1600: 1600A				ZY2: Turning handle (hand-operated eccentric type-round handle)	
	2000: 2000A				ZF2: Turning handle (hand-operated eccentric type-square handle)	
					Z3: Turning handle (Hand-operated one-piece type) (Only available for 160, 250)	

Note: ① The voltage of electric operation is divided into: DC24, DC110V, DC220V, AC230V, AC400V;

Conventional production is AC230V.

② Conventional factory default is the lead type: wire length 500mm (other lengths need to be customized);

Can be customized terminal type; undervoltage accessories are only terminal type.



Usage code ③	Product with N pole the code is selectable	Additional functionality code	Mounting and wiring options code ④	Protective accessories code ⑤	Rated current	
2	B	VI /	P	Z	In=100A	
No code: distribution protection	A: There is no over-current protection at pole N and the N pole is always connected.	No code : Conventional products	No designation : Front panel wiring (fixed)	No code: General products	160: 32,63,100,125, 160A (0.4-1In adjustable)	
		G: With grounding protection	P: Coupling row (extended copper row)		250: 160,250A (0.4-1In adjustable)	
		III: Overload alarm does not trip	Z1: Rear connection (fixed type)		400: 400A (0.4-1In adjustable)	
	B: There is no over-current protection at pole N and N-pole operates with other three poles.	R: Thermomagnetic protection	Z2Q: Plug-in front connection (split type)		630: 500,630A (0.4-1In adjustable)	
		V: Low temperature rise model 40K	Z2H: Plug-in rear connection (split type)		Z: Terminal cover	800: 630,800A (0.4-1In adjustable)
		VI: Low temperature rise model 50K	Z3Q: Plug-in front connection (one-piece)			1250: 630,800,1000, 1250A (0.4-1In adjustable)
VII: Low temperature rise model 60K	Z3H: Plug-in rear connection (one-piece)	1600: 800,1000, 1250,1600A (0.4-1In adjustable)				
2: motor protection	C: There is over-current protection at pole N and N-pole operates with other three poles.	DF: Draw-out type front connection	DR: Draw-out type rear connection		2000: 1000,1250, 1600,2000A (0.4-1In adjustable)	
		D: There is over-current protection at pole N and the N pole is always connected.				

③ Magnetic protection 14In does not operate, 20In action; 700A-2000A without motor protection type.

④ 160, 250 no pull-out; 1250, 2000 with coupling row only.

⑤ Terminal cover is only available for 3P;

400 and 630 are divided into narrow and long models, and wide and long models, and the default is wide and long models; 2000 are not available at the moment.

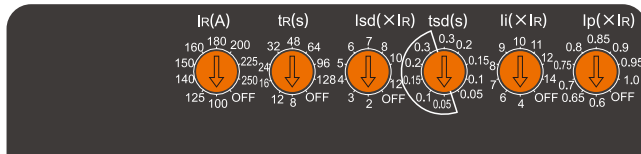
## Technical Parameters

Frame size Inm(A)		160		250		400	
Rated operational current In(A)		32, 63, 100, 125, 160A		160, 250A		400A	
Trip rated current Ir(A)		63, 75, 80, 90, 100, 125, 140, 150, 160		100, 125, 140, 150, 160, 180, 200, 225, 250		160, 180, 200, 220, 240, 280, 320, 360, 400	
Rated insulation voltage Ui(V)		1000V		1000V		1000V	
Rated impulse withstand voltage Uimp(kV)		8kA		8kA		8kA	
Rated operational voltage Ue(V), AC 50/60Hz		AC400V, AC690V		AC400V, AC690V		AC400V, AC690V	
Breaking capacity code		S	H	S	H	H	
Number of poles		3P,4P	3P,4P	3P,4P		3P,4P	
Rated service short circuit breaking capacity Ics (kA)	230/240V	28	35	28	35	50	
	400/415V	18	25	18	25	35	
	690V	4	8	4	8	10	
Rated ultimate short circuit breaking capacity Icu (kA)	230/240V	40	50	40	50	75	
	400/415V	25	35	25	35	50	
	690V	8	8	8	8	10	
Standards		IEC 60947-2		IEC 60947-2		IEC 60947-2	
Utilization category		A		B		B	
Isolation function		■		■		■	
Trip unit type		Electronic		Electronic		Electronic	
Mechanical life (times)		8500		8500		4000	
Electrical life (times)		1500		1500		1000	

Poles		3P	4P	3P	4P	3P	4P
Inner accessories	Alarm contact	■	■	■	■	■	■
	Shunt release	■	■	■	■	■	■
	Shunt release + Alarm contact	■	■	■	■	■	■
	Single auxiliary contact	■	■	■	■	■	■
	Dual auxiliary contacts	■	■	■	■	■	■
	Single auxiliary contact + Alarm contact	■	■	■	■	■	■
	Dual auxiliary contacts + Alarm contact	-	-	-	-	■	■
	Under voltage release	■	■	■	■	■	■
	Under voltage release + Alarm contact	-	-	-	-	■	■
	Shunt release + Single auxiliary contact	■	■	■	■	■	■
	Shunt release + Dual auxiliary contacts	■	■	■	■	■	■
	Shunt release + Auxiliary alarm	■	■	■	■	■	■
	Shunt release + Under voltage release	■	■	■	■	■	■
	Two sets of single auxiliary contacts	-	-	-	-	■	■
	Single auxiliary contact + Dual auxiliary contacts	-	-	-	-	■	■
	Two sets of dual auxiliary contacts	-	-	-	-	■	■
	Single auxiliary contact + Auxiliary alarm	-	-	-	-	■	■
	Dual auxiliary contact + Auxiliary alarm	-	-	-	-	■	■
Under voltage release + Single auxiliary contact	-	-	-	-	■	■	
Under voltage release + Dual auxiliary contact	-	-	-	-	■	■	
Under voltage release + Auxiliary alarm	-	-	-	-	■	■	
External accessories	Motor-driven mechanism	■	■	■	■	■	■
	Manual operational mechanism	■	■	■	■	■	■
	Extended copper row	■	■	■	■	■	■
	Mechanical interlocking	■	■	■	■	■	■
	Plug-in front connection split type	■	■	■	■	■	■
	Plug-in front connection one-piece	■	■	■	■	■	■
	Plug-in front connection fixed type	■	■	■	■	■	■
	Plug-in rear connection split type	■	■	■	■	■	■
	Plug-in rear connection one-piece	■	■	■	■	■	■
Plug-in rear connection fixed type	■	■	■	■	■	■	
Draw-out type rear connection	-	-	-	-	■	-	



## Electronic trip unit

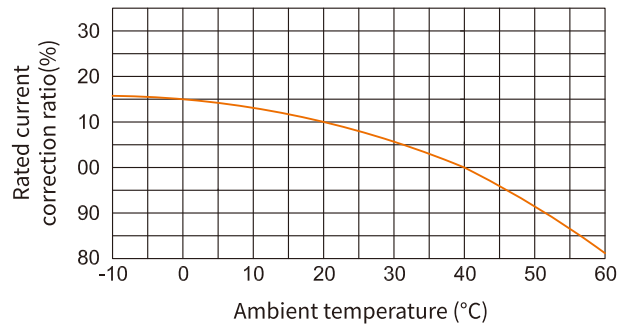


EKM8E-250

- Ir: Overload long delay setting current
- Isd: Short-circuit short delay setting current
- li: Short-circuit instantaneous setting current
- tr: Overload long delay setting time
- tsd : Short-circuit short delay setting time
- Ip: Overload pre-alarm setting current

Frame size	Setting current and time parameters						
	In(A)	Ir(A)	Tr(s)	Isd(×Ir)	Tsd(s)	li(×Ir)	Ip(×Ir)
EKM8E-160	32	12,14,16,19,22,24,26,29,32,OFF	8,12,16,24,32,48,64,96,128,OFF	2,3,4,5,6,7,8,10,12,OFF	0.05,0.1,0.15,0.2,0.3,OFF	4,6,7,8,9,10,11,12,14,OFF	0.6,0.65,0.7,0.75,0.8,0.85,0.9,0.95,1,OFF
	63	25,28,32,35,41,44,50,57,63,OFF					
	100	40,45,50,55,60,70,80,90,100,OFF					
	125	50,63,75,80,85,90,95,100,125,OFF					
	160	63,75,80,90,100,125,140,150,160,OFF					
EKM8E-250	160	63,75,80,90,100,125,140,150,160,OFF					
	250	100,125,140,150,160,180,200,225,250,OFF					
EKM8E-400	400	160,180,200,220,240,280,320,360,400,OFF					
		200,225,250,280,300,320,350,375,400,OFF					
EKM8E-630	500	200,225,250,300,320,350,400,450,500,OFF					
	630	250,280,315,350,380,440,500,570,630,OFF 400,440,460,480,500,530,560,600,630,OFF					
EKM8E-800	630	250,280,315,350,380,440,500,570,630,OFF					
		400,440,460,480,500,530,560,600,630,OFF					
	800	320,400,450,500,550,630,700,750,800,OFF 500,550,600,630,660,700,740,780,800,OFF					
EKM8E-1250	630	400,440,460,480,500,530,560,600,630,OFF					
		320,400,450,500,550,630,700,750,800,OFF					
	800	500,550,600,630,660,700,740,780,800,OFF					
		400,500,600,630,700,800,900,950,1000,OFF 630,680,700,750,800,850,900,950,1000,OFF					
	1250	500,600,700,800,900,1000,1100,1200,1250,OFF 850,900,950,1000,1050,1100,1150,1200,1250,OFF					
EKM8E-1600	800	320,400,450,500,550,630,700,750,800,OFF					
	1000	400,500,600,630,700,800,900,950,1000,OFF					
	1250	500,600,700,800,900,1000,1100,1200,1250,OFF					
	1600	630,800,900,1000,1100,1250,1400,1500,1600,OFF					
EKM8E-2000	1000	400,500,600,630,700,800,900,950,1000,OFF					
	1250	500,600,700,800,900,1000,1100,1200,1250,OFF					
	1600	630,800,900,1000,1100,1250,1400,1500,1600,OFF					
	2000	800,1000,1250,1400,1500,1600,1800,1900,2000,OFF					

## Current-Temperature Characteristics



## Derating of Temperature

Frame size	Ambient temperature (40°C product)														
	-10°C	-5°C	0°C	5°C	10°C	15°C	20°C	25°C	30°C	35°C	40°C	45°C	50°C	55°C	60°C
EKM8E-160	1.22	1.2	1.15	1.14	1.12	1.09	1.07	1.05	1.03	1.01	1	0.977	0.957	0.936	0.915
EKM8E-250	1.2	1.18	1.15	1.13	1.11	1.09	1.08	1.07	1.05	1.02	1	0.985	0.968	0.952	0.935
EKM8E-400	1.4	1.35	1.3	1.22	1.18	1.13	1.09	1.06	1.04	1.02	1	0.985	0.968	0.952	0.935
EKM8E-630	1.2	1.18	1.13	1.11	1.09	1.08	1.07	1.05	1.03	1.01	1	0.985	0.968	0.952	0.935
EKM8E-800	1.25	1.23	1.18	1.15	1.13	1.1	1.07	1.05	1.03	1.02	1	0.978	0.957	0.936	0.915
EKM8E-1250	1.25	1.21	1.2	1.15	1.13	1.1	1.08	1.06	1.04	1.02	1	0.978	0.957	0.936	0.915
EKM8E-1600	1.18	1.15	1.12	1.15	1.13	1.1	1.08	1.06	1.04	1.02	1	0.978	0.957	0.936	0.915

Note: When the ambient temperature is below 40°C, the product can be used normally, with no derating capacity.

## Derating of Altitude

Altitude (m)	2000	2500	3000	4000	4500	5000
Power frequency withstand voltage (V)	2500	2500	2250	1950	1775	1625
Insulation voltage (V)	1000	1000	900	780	710	650
Maximum operationnal voltage (V)	400	400	350	312	284	260
Correction coefficient of operating current (In)	1	1	0.98	0.95	0.92	0.9

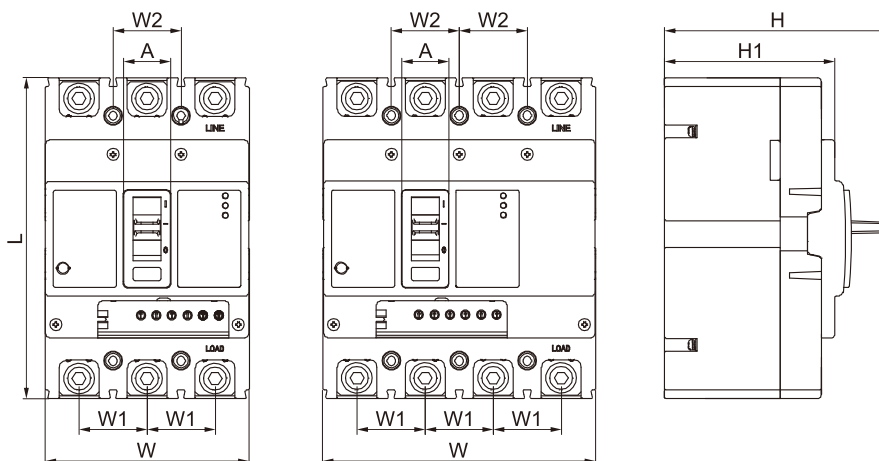
# EKM8E MCCB 160AF~2000AF



Electronic Adjustable Type MCCB

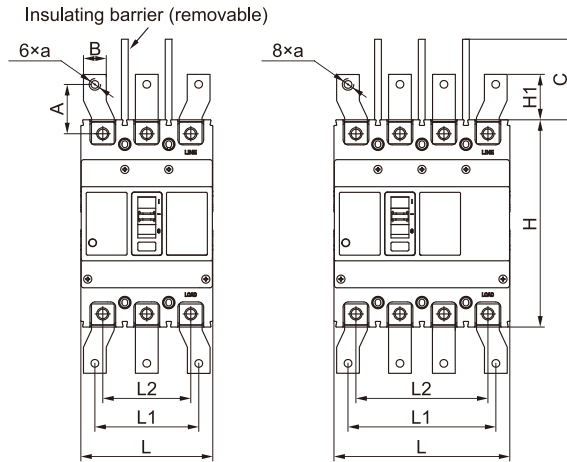
Standard\_ IEC60947-2

## Overall Dimension (mm)



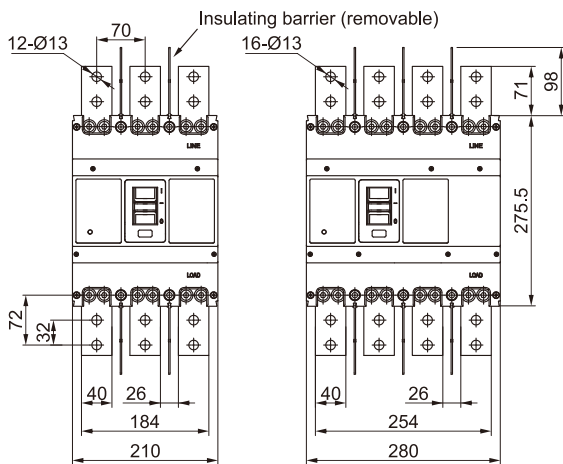
Product type	Poles	W	L	H	H1	W1	W2	A
EKM8E-160	3	90	155	94(S)/108(H)	68(S)/82(H)	30	30	25
	4	120	155	94(S)/108(H)	68(S)/82(H)	30	30	25
EKM8E-250	3	105	165	96(S)/116(H)	68(S)/88(H)	35	35	24
	4	140	165	96(S)/116(H)	68(S)/88(H)	35	35	24
EKM8E-400/630	3	140	257	152	103	44	44	51
	4	184	257	152	103	44	44	51
EKM8E-800	3	210	275.5	152	103	70	70	58
	4	280	275.5	152	103	70	70	58
EKM8E-1250	3	210	275.5	152	103	70	70	58
	4	280	275.5	152	103	70	70	58
EKM8E-1600/2000	3	210	340	244	141	70	70	78
	4	280	340	244	141	70	70	78

## Front Connection Installation Dimension (mm)

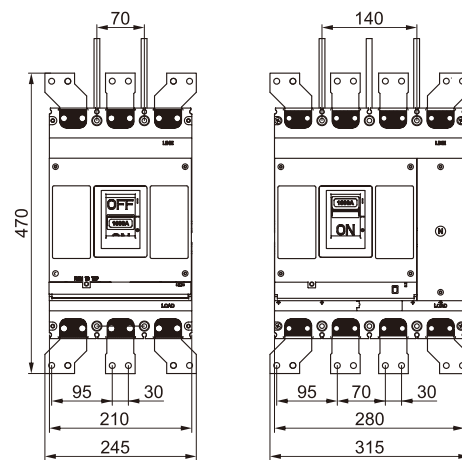


Product type	Poles	L	L1	L2	H	H1	A	B	C	a
EKM8T-160	3	90	78	60	155	21.8	24.5	15	48(S)/64(H)	M8
	4	120	108	90	155	21.8	24.5	15	48(S)/64(H)	M8
EKM8E-250	3	105	84	70	165	41.8	43.5	20	48(S)/64(H)	M8
	4	140	119	105	165	41.8	43.5	20	48(S)/64(H)	M8
EKM8E-400/630	3	140	111	87	257	45.4	43	28	98	Ø14
	4	184	155	131	257	45.4	43	28	98	Ø14
EKM8E-800	3	210	160	140	275.5	50.5	53	40	98	Ø13
	4	280	230	210	275.5	50.5	53	40	98	Ø13

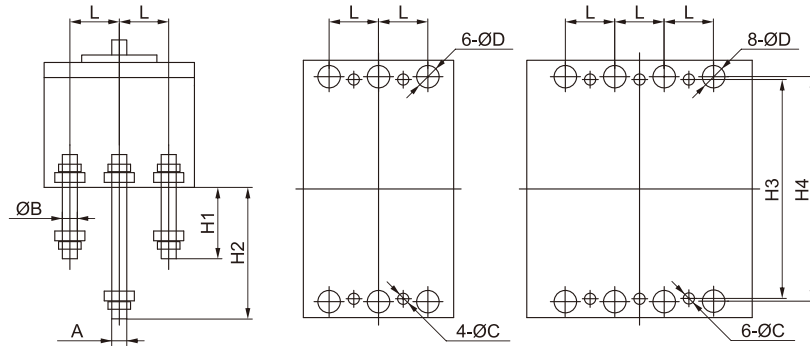
EKM8E-1250



EKM8E-1600/2000

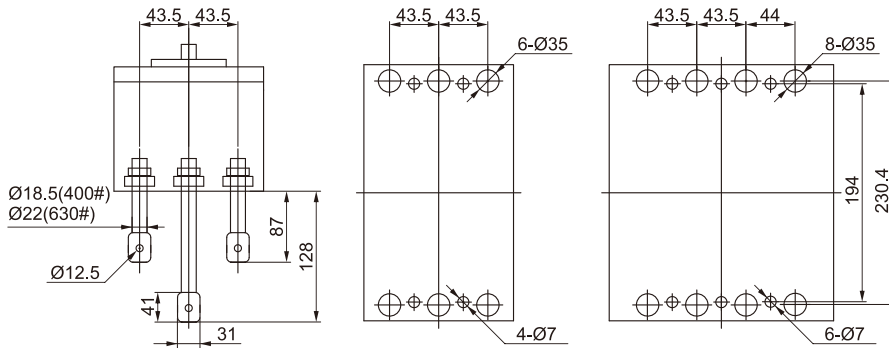


## Rear Connection Installation Dimension (mm)

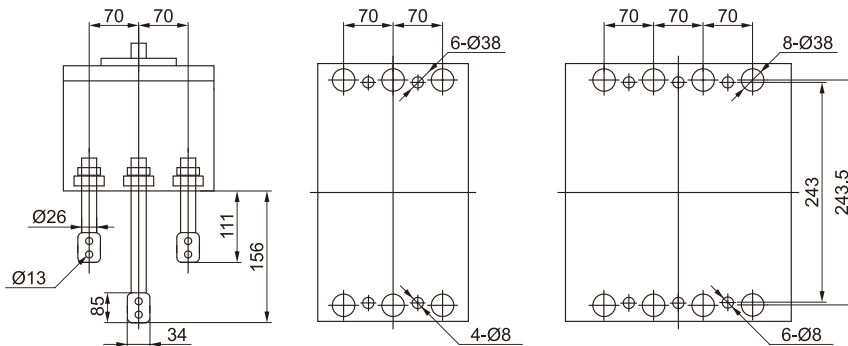


Product type	L	H1	H2	H3	H4	A	B	C	D
EKM8E-160	30	49	94	132	134	M8	12	4.5	15
EKM8E-250	35	82	121	126	144	M12	12	4.5	15

### EKM8E-400/630



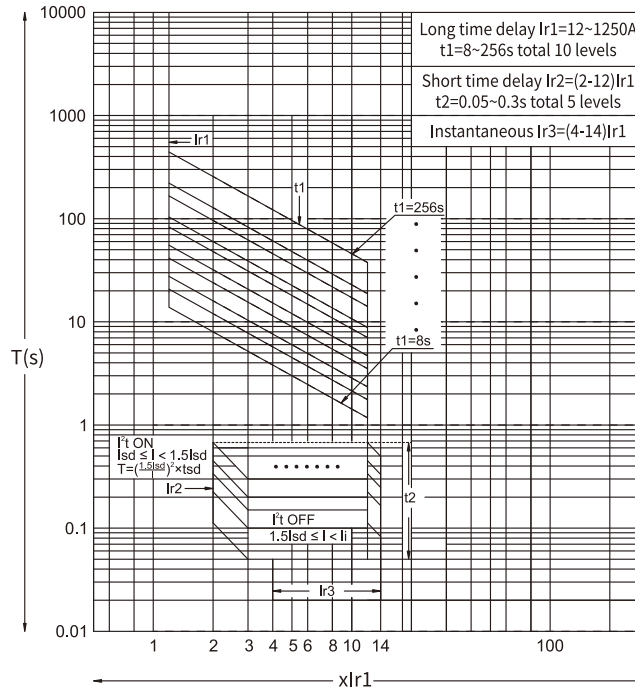
### EKM8E-800



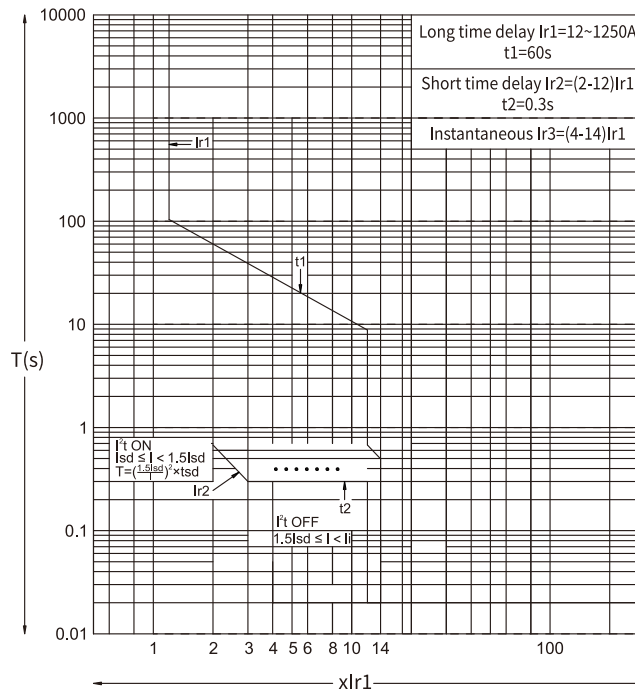


## Tripping Curve

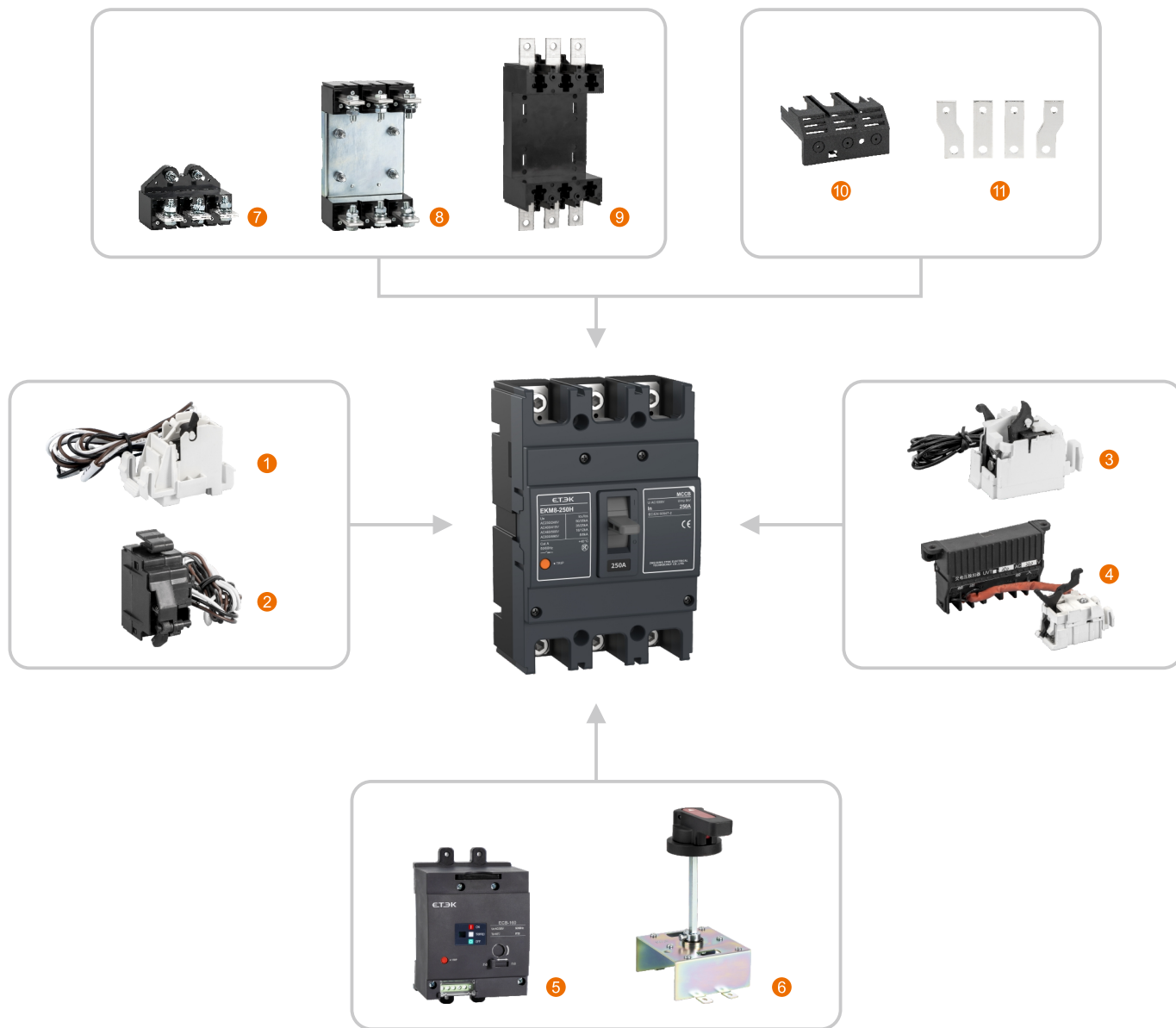
EKM8E (6 knobs)



EKM8E (3 knobs)



## Overview of Accessories



1 Auxiliary contact

2 Alarm contact

3 Shunt release

4 Under voltage release

5 Electric operating mechanism

6 Manual operation mechanism

7 Plug-in rear connection split type

8 Plug-in rear connection integrated type

9 Plug-in front connection integrated type

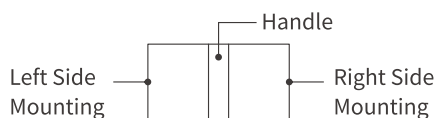
10 Terminal cover

11 Extension terminal

## EKM8, EKM8T Accessory Table

Accessory code	Accessory name	125AF			160AF			250AF		400/630AF		800/1250/2000AF	
		2P	3P	4P	2P	3P	4P	3P	4P	3P	4P	3P	4P
00	No	-	-	-	-	-	-	-	-	-	-	-	-
08	Alarm contact	-			-								
10	Shunt release												
18	Shunt release + Alarm contact	-			-								
20	Single auxiliary contact												
27	Dual auxiliary contacts												
28	Single auxiliary contact + Alarm contact	-			-								
29	Dual auxiliary contacts + Alarm contact	-			-								
30	Under voltage release												
38	Under voltage release + Alarm contact	-			-								
40	Shunt release + Single auxiliary contact	-			-								
41	Shunt release + Dual auxiliary contacts	-			-								
48	Shunt release + Auxiliary alarm	-			-								
50*	Shunt release + Under voltage release	-			-								
60	Two sets of single auxiliary contacts	-			-								
61	Single auxiliary contact + Dual auxiliary contacts	-			-								
62	Two sets of dual auxiliary contacts	-			-								
68	Single auxiliary contact + Auxiliary alarm	-			-								
69	Dual auxiliary contact + Auxiliary alarm	-			-								
70	Under voltage release + Single auxiliary contact	-			-								
71	Under voltage release + Dual auxiliary contact	-			-								
78	Under voltage release + Auxiliary alarm	-			-								

\*Note: Code 50: 125, 160 need to customize the left undervoltage; The 250 requires custom left spin-off.  
 Selectable sub-excitation and undervoltage voltage range: DC24V, DC110V, DC220V, AC230V, AC400V; The conventional production is AC230V.



- Alarm contact
- Under voltage release
- Single auxiliary contact
- Shunt trip
- Dual auxiliary contacts

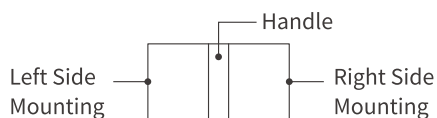
EKM8T Thermo-Magnetic Double Adjustable Type MCCB without 2P

## EKM8E Accessory Table

Accessory code	Accessory name	160AF		250AF		400/630AF		800/1250AF		2000AF	
		3P	4P	3P	4P	3P	4P	3P	4P	3P	4P
00	No	-	-	-	-	-	-	-	-	-	-
08	Alarm contact										
10	Shunt release										
18	Shunt release + Alarm contact										
20	Single auxiliary contact										
27	Dual auxiliary contacts										
28	Single auxiliary contact + Alarm contact										
29	Dual auxiliary contacts + Alarm contact	-	-	-	-						
30	Under voltage release										
38	Under voltage release + Alarm contact	-	-	-	-						
40	Shunt release + Single auxiliary contact										
41	Shunt release + Dual auxiliary contacts										
48	Shunt release + Auxiliary alarm										
50*	Shunt release + Under voltage release										
60	Two sets of single auxiliary contacts	-	-	-	-						
61	Single auxiliary contact + Dual auxiliary contacts	-	-	-	-						
62	Two sets of dual auxiliary contacts	-	-	-	-						
68	Single auxiliary contact + Auxiliary alarm	-	-	-	-						
69	Dual auxiliary contact + Auxiliary alarm	-	-	-	-						
70	Under voltage release + Single auxiliary contact	-	-	-	-						
71	Under voltage release + Dual auxiliary contact	-	-	-	-						
78	Under voltage release + Auxiliary alarm	-	-	-	-						

\*Note: Code 50: 160, 250 need to customize the left undervoltage.

Selectable sub-excitation and undervoltage voltage range: DC24V, DC110V, DC220V, AC230V, AC400V; The conventional production is AC230V.



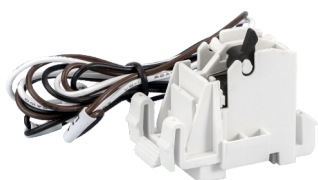
- Alarm contact
- Under voltage release
- Single auxiliary contact
- Shunt trip (mechanical)
- Dual auxiliary contacts
- Shunt trip (electronic)

## AX

Auxiliary contact



AXS-125



AX-250

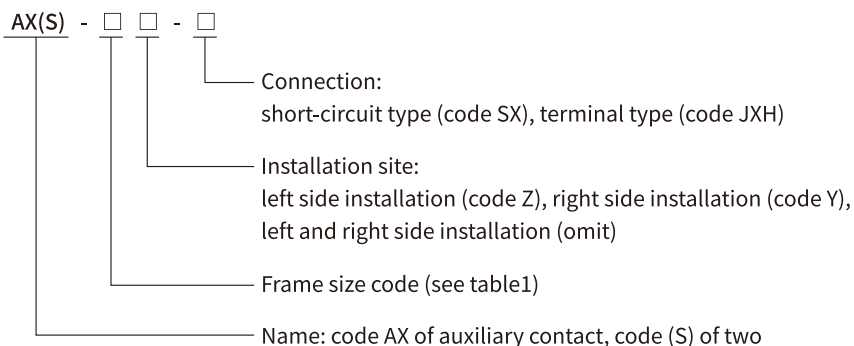


AX-400

### Function

Accessories that remotely indicate the closing (ON) or opening/free tripping (OFF) status of the circuit breaker are connected to the auxiliary circuit of the circuit breaker.

### Model Description



### Frame Size Code

Frame size	125~160	250	400~1250	1600~2000
Code	AX(S)-125	AX(S)-250	AX(S)-400	AX(S)-2000

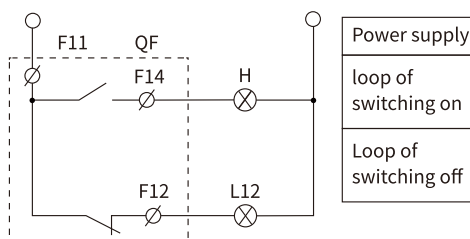
### Electrical Wiring Diagram

Accessory name	ON	OFF/TRIP
Auxiliary		

### Electrical Characteristics

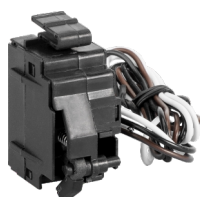
Operational voltage (V)	AC		DC		
	230	400	110	220	24
Operational current (A)	0.3	0.3	0.15	0.15	0.15

### Wiring Diagram

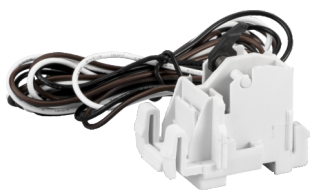


## AL

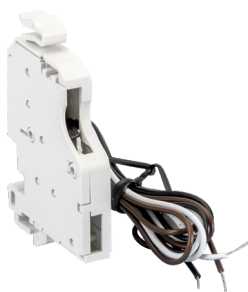
Alarm contact



AL-125



AL-250

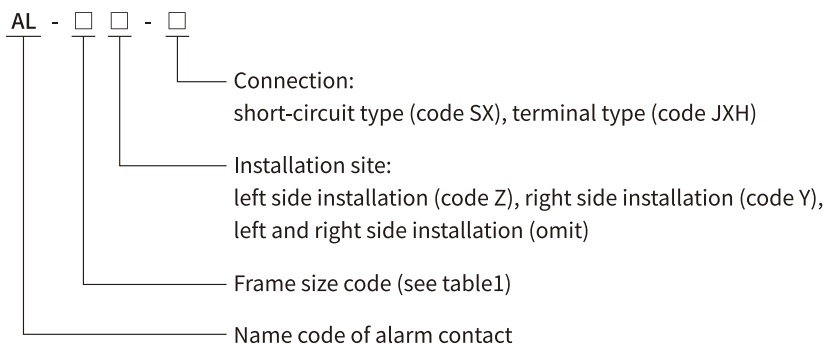


AL-400

### Function

It is mainly used to provide a signal for circuit breakers when a fault occurs or when a free blur is made.

### Model Description



### Frame Size Code

Frame size	125~160	250	400~1250	1600~2000
Code	AL-125	AL-250	AL-400	AL-2000

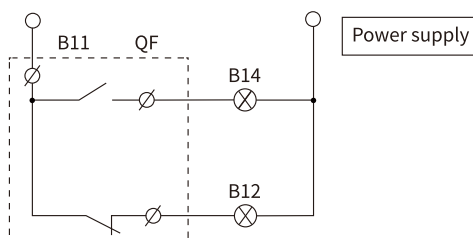
### Electrical Wiring Diagram

Accessory name	ON/OFF	TRIP
Alarm		

### Electrical Characteristics

Operational voltage (V)	AC		DC		
	230	400	110	220	24
Operational current (A)	0.3	0.3	0.15	0.15	0.15

### Wiring Diagram

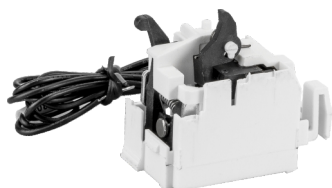


## SHT

Shunt release



SHT-125



SHT-250

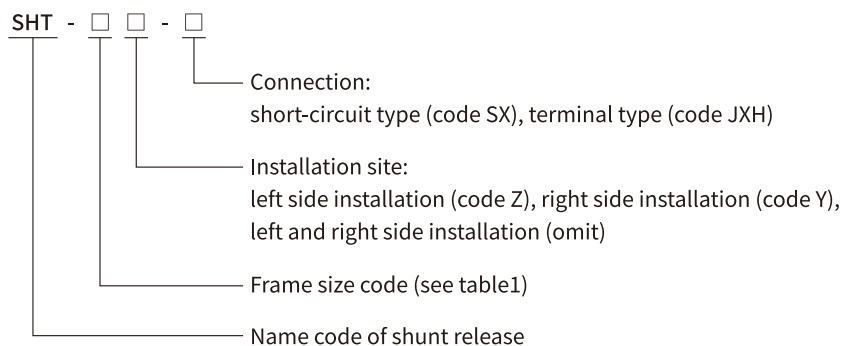


SHT-400

### Function

The shunt tripper is an accessory for manipulating the opening over long distances. When the power supply voltage is equal to any voltage between 70%~110% of the rated control power supply voltage, the shunt trip should be able to make the circuit breaker operate reliably.

### Model Description



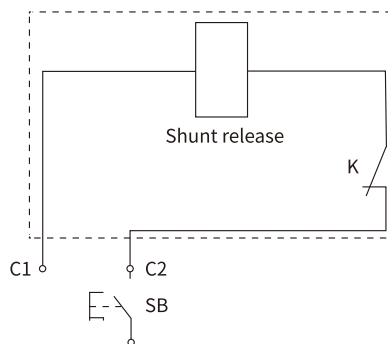
### Frame Size Code

Frame size	125~160	250	400~1250	1600~2000
Code	SHT-125	SHT-250	SHT-400	SHT-2000

### Electrical Characteristics

Operational voltage (V)	AC		DC		
	230	400	110	220	24
Operational current (A)	0.3	0.3	0.15	0.15	0.15

### Electrical Wiring Diagram

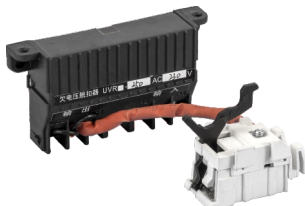


## UVR

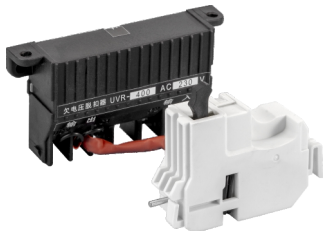
Under voltage release



UVR-125



UVR-250

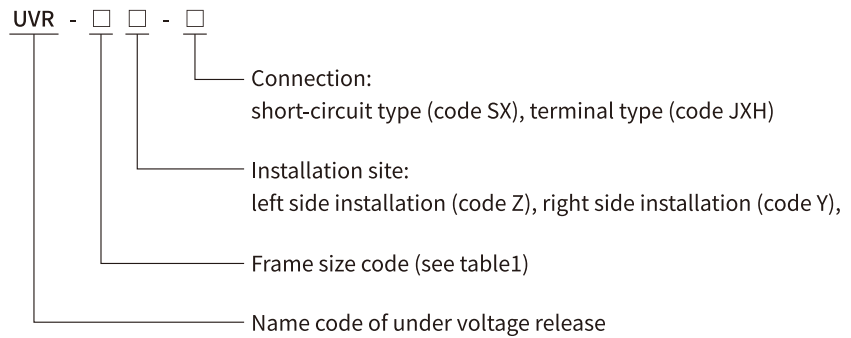


UVR-400

### Function

Realize the undervoltage protection function of the circuit breaker to disconnect the circuit breaker when the power supply voltage is too low to protect the power-using equipment. When the supply voltage drops (or even drops slowly) to 70% to 35% of the rated control supply voltage, the undervoltage tripper shall enable the circuit breaker to disconnect reliably; When the supply voltage is equal to or greater than 85% of the rated control supply voltage of the undervoltage striker, it should be able to ensure that the circuit breaker is closed; When the supply voltage is less than 35% of the rated control supply voltage of the undervoltage detent, the undervoltage detent shall be able to prevent the circuit breaker from closing.

### Model Description



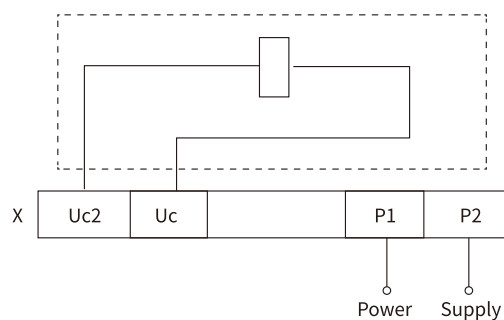
### Frame Size Code

Frame size	125~160	250	400~1250	1600~2000
Code	UVR-125	UVR-250	UVR-400	SHT-2000

### Electrical Characteristics

Operational voltage (V)	AC		DC		
	230	400	110	220	24
Operational current (A)	0.3	0.3	0.15	0.15	0.15

### Electrical Wiring Diagram





## ECB

Electric operating mechanism



ECB-125



ECB-250

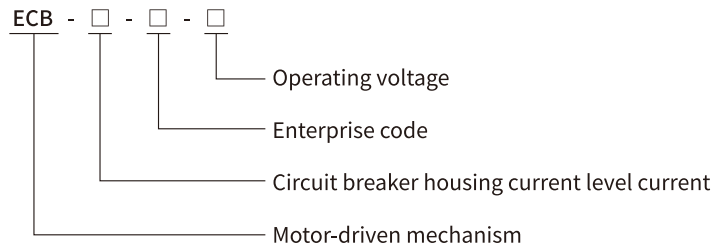


ECB-400

### Function

It is suitable for closing, opening and re-fastening circuit breakers over long distances, as well as for automation applications.

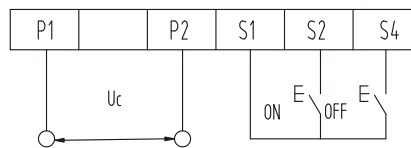
### Model Description



### Electrical Characteristics

Model	125/160/250/400/630/800/1250/2000
Voltage specifications	AC230V, AC400V, DC24V
Rated frequency	50Hz

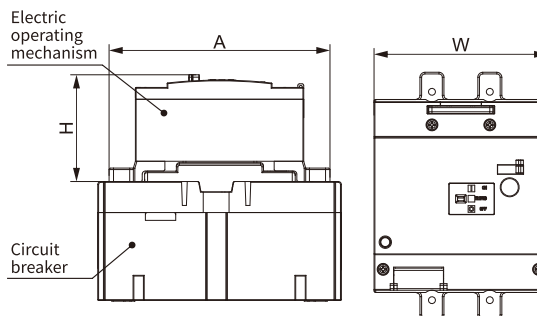
### Electrical Wiring Diagram



#### WARNING

- When manual operation, it should be operated 180° clockwise, and counterclockwise operation is prohibited.
- Withstand voltage test: It should be between the inlet terminals P1 and P2 (excluding S1, S2, S4) of the power supply and the installation screws of the electric operation that can withstand the power frequency withstand voltage test of AC 50Hz and 2000V (the withstand voltage test is prohibited when the rated voltage is DC24V).
- When the electric operation is wiring, P1 and P2 are forbidden to be connected with S1, S2 and S4.

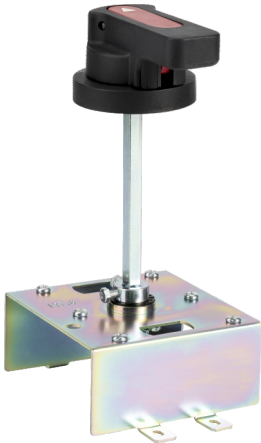
### Dimensions and Installation (mm)



Model	A	H	W
ECB-160	144	76	90
ECB-250	150	72	105
ECB-400/630	212	74	140
ECB-800/1250	264	93	210
ECB-2000 Without stand	174	78	210

## SC

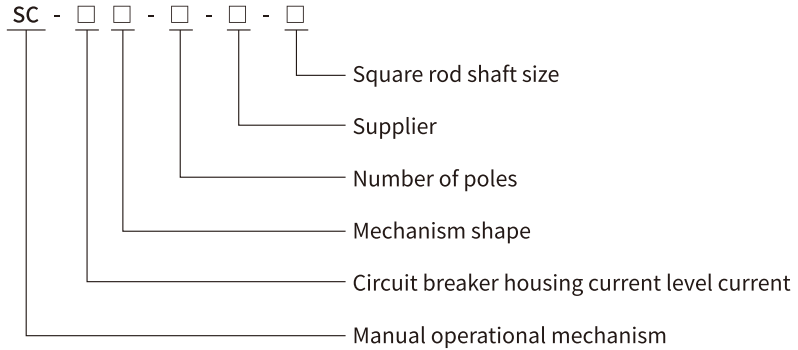
Manual operational mechanism



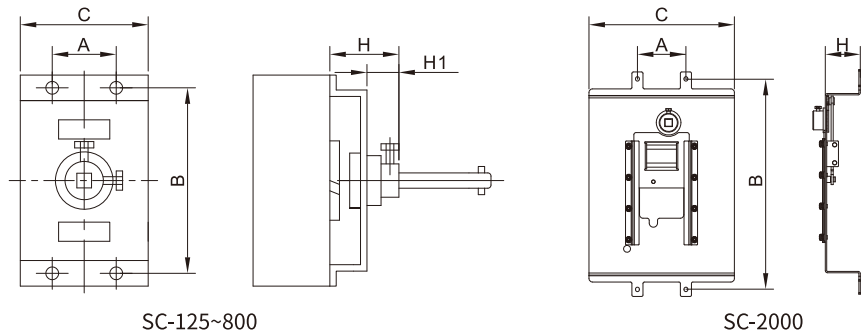
### Function

According to the ergonomics, the unique design and transmission structure are adopted, and the closing, opening and re-buckle operation of the circuit breaker are realized by rotating the handle.

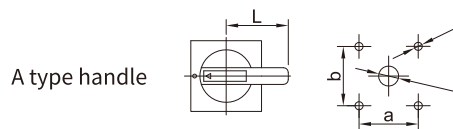
### Model Description



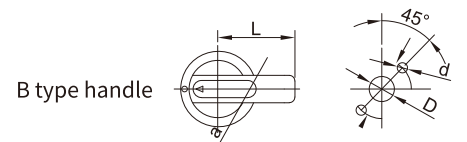
### Dimensions and Installation (mm)



Model	A	B	C	H	H1
SC-125	25	111	77	58	13
SC-160	30	132	82	57	13
SC-250	35	126	105	64	13
SC-400/630	128	194	140	95	20
SC-800	198	243	208	94	20
SC-2000	70	304	210	50.5	-



Model	D	d	a	b	L
A1 (63-250A)	Ø35	Ø4.5	65	65	65
A2 (400-1000A)	Ø35	Ø4.5	65	65	95
A3 (1250-1600A)	Ø35	Ø4.5	65	65	125



Model	D	d	a	L
B1 (63-250A)	Ø35	Ø4.5	Ø53	65
B2 (400-1000A)	Ø35	Ø4.5	Ø53	95
B3 (1250-1600A)	Ø35	Ø4.5	Ø53	125

## Z2H

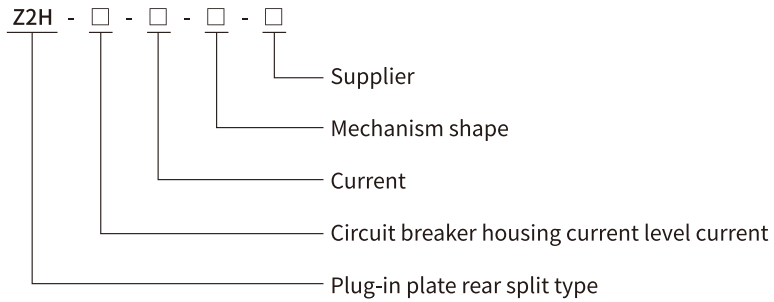
Plug-in rear connection split type



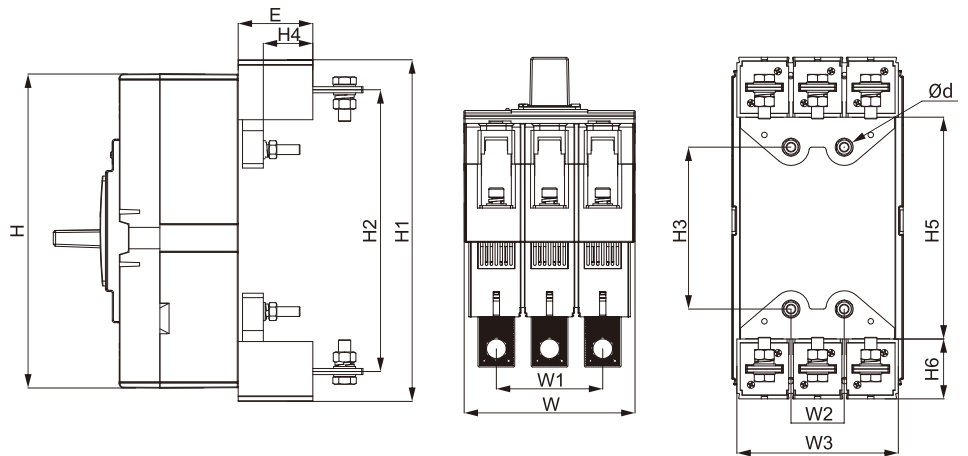
### Function

Enables the circuit breaker to have a flexible wiring method for mating with the switchboard.

### Model Description



### Dimensions and Installation (mm)



Model	Poles	W	W1	W2	W3	E	d	H	H1	H2	H3	H4	H5	H6
Z2H-125	3P	75	50	25	76	48	5.5	130	141	110	55	30	82	29
	4P	/												
Z2H-160	3P	91	60	30	92	52	6.5	155	168	134	54	30	92	38
	4P	120												
Z2H-250	3P	105	70	70	105	50	6.5	165	179	144	54	33.5	108	35.5
	4P	140												
Z2H-400/630	3P	132	87	43.5	132	61	8.5	257	279.4	230.4	132.4	40.5	181.4	49
	4P	176												
Z2H-800	3P	210	140	90	210	87	11	275.5	305	256	146	60	180	62.5
	4P	/												

## Z3H

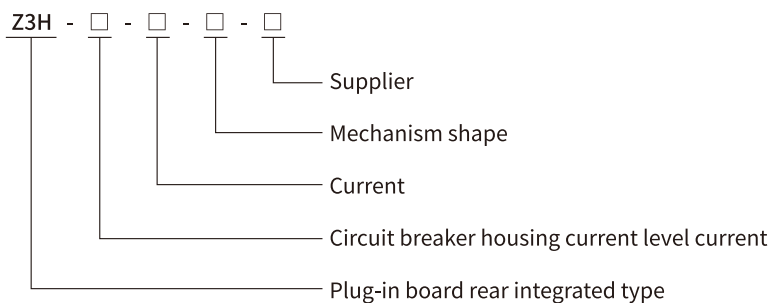
Plug-in rear connection one-piece



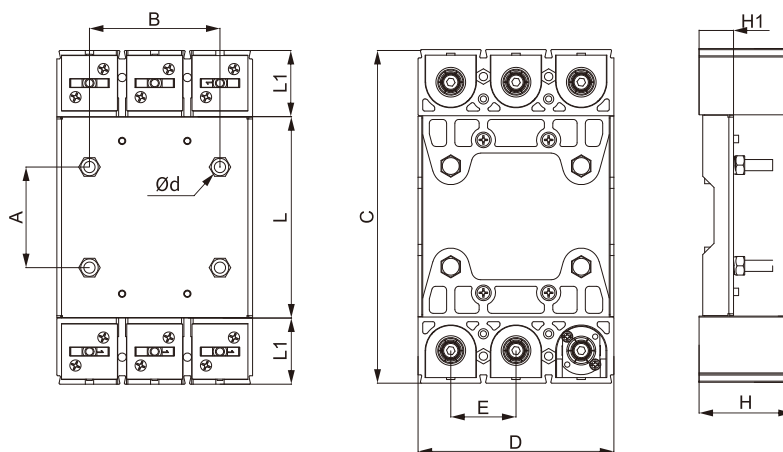
### Function

Enables the circuit breaker to have a flexible wiring method for mating with the switchboard.

### Model Description



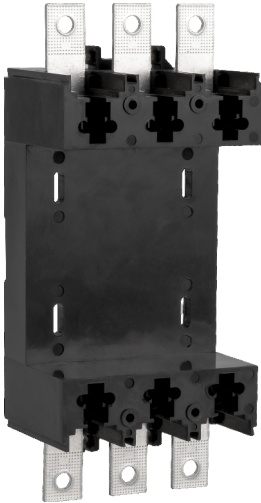
### Dimensions and Installation (mm)



Model	Poles	D	A	B	C	E	d	H	L	L1	H1
Z3H-125	3P	75	50	50	142	25	5.5	56	82	32	20
	4P	100		75							
Z3H-160	3P	90	67	60	162	30	6.5	56	80	51	20
	4P	125		90							
Z3H-250	3P	105	54	70	179	35	6.5	52	108	35.5	18.5
	4P	140		105							
Z3H-400/630	3P	132	132.4	43.5	279.4	43.5	8.5	63	181.4	49	22.5
	4P	176									
Z3H-800	3P	210	143	140	311	70	7	125	181	87	50
	4P	280		210							

## Z3Q

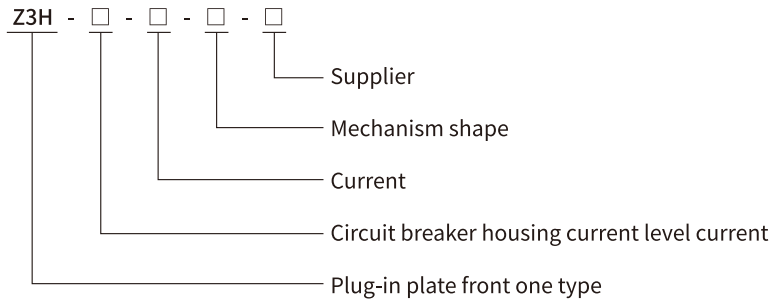
Plug-in front connection one-piece



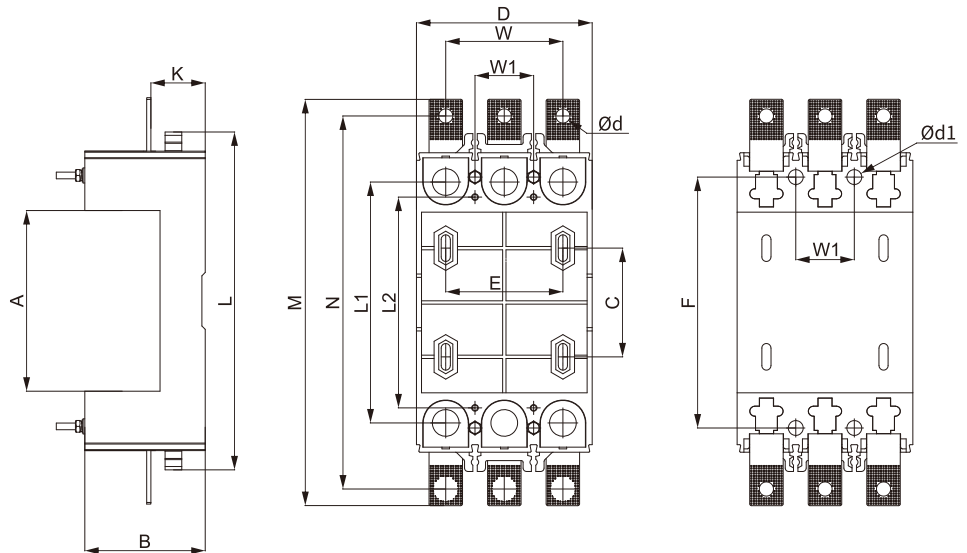
### Function

Enables the circuit breaker to have a flexible wiring method for mating with the switchboard.

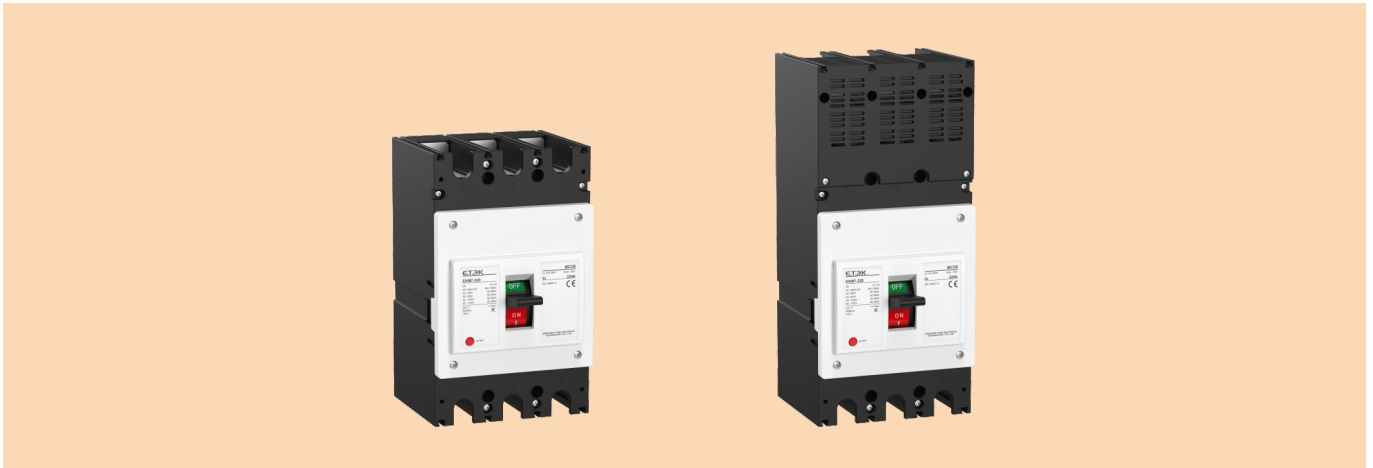
### Model Description



### Dimensions and Installation (mm)



Model	Poles	D	A	B	C	E	d	F	W	W1	L	L1	L2	K	M	N	d1
Z3Q-125	3P	75	91	48	54	50	6	90	50	25	/	110	/	23	184	167	3.5
	4P	/															
Z3Q-160	3P	91	101	55	61	60	6.5	110	60	30	/	132	/	25	215	199	5
	4P	/															
Z3Q-250	3P	105	108	72	65	70	6	150	70	35	202	144	126	32.5	243	223	3.5
	4P	140							105								
Z3Q-400/ 630	3P	132	181	85	144	88	10.5	249	87	44	309	230	194	44.5	358	332	7.7
	4P	173							130.5								
Z3Q-800	3P	210	180	87	145	90	13	145	140	/	/	243	/	66	405	374	11
	4P	/															



### Overview

The EKM7 series high voltage molded case circuit breaker is designed to meet the needs of power distribution networks operating at AC 50/60Hz. With a rated insulation voltage of 1200V, it offers reliable protection for circuits with rated voltages ranging from 690V to 1140V, and a rated current of up to 630A.

This circuit breaker is ideal for infrequent switching of circuits and occasional motor starting. It effectively safeguards against overloads, short circuits, overvoltage, and undervoltage, ensuring the safety and stability of power lines.

In addition, the EKM7 series high voltage molded case circuit breaker complies with the IEC60947-2 standard, guaranteeing its quality and performance.

### Product Features

- High mechanical life and electrical life.
- Short arcing distance: standard arc suppression cover and three-layer free metal partition to avoid secondary system failures caused by arcing during disconnection.
- Super current limiting capability.
- Super insulation performance.
- Reverse inlet line without capacity reduction.
- Anti-humidity, heat, salt spray, and mold resistance.
- New single breakpoint structure, more stable and reliable than double breakpoint structure.

### Core Patented Technology

- Repulsion opening anti-drop technology with low repulsion opening reversal point of the moving contact.
- Arc Ionization elimination technology to realize shorter flashover.
- Arrangement of the handle away from the arc extinguishing area to make the operator safer.

### Model Fast Selection Guide

EKM7 - 630 H / 3 00 D

EKM7	630	H	3	00	D
↓	↓	↓	↓	↓	↓
Product code	Frame size	Breaking capacity level	Poles	Product Accessories	Color code
EKM7 Series MCCB	320, 630	M: ordinary type H: high breaking type	3P	See accessory table	None: off-white cover, black handle D: dark gray cover, red handle

### Technical Parameters

Model	EKM7-320						EKM7-630				
Rated current (A)	16,20,25,32,40,50,63,75,80,100,125,140,160,180,200,225,250,320						225,250,320,350,400,500,630				
Pole	3P										
Rated working voltage U <sub>e</sub> (V)	380/415, 690, 800, 1000, 1140										
Rated insulation voltage U <sub>i</sub> (V)	1200										
Rated impulse withstand voltage U <sub>imp</sub> (kV)	12										
Power frequency withstand voltage (1min)(V)	3500										
Rated ultimate short-circuit breaking capacity I <sub>cu</sub> (kA)	Breaking capacity level	AC380/415V	AC690V	AC800V	AC1000V	AC1140V	AC380/415V	AC690V	AC800V	AC1000V	AC1140V
	M	/	60	50	20	12	/	60	50	20	12
Rated operating short-circuit breaking capacity I <sub>cs</sub> (kA)	H	100	65	50	30	20	100	65	50	32	20
	M	/	60	50	20	12	/	60	50	20	12
Rated operating short-circuit breaking capacity I <sub>cs</sub> (kA)	H	100	65	50	30	20	100	65	50	32	20
	Mechanical life (cycles)	15000									
Electrical life (cycles)	5000	3000	3000	1000	1000	5000	3000	3000	1000	1000	
Arc distance(mm)	50										
Dimension W×L×H(mm)	120×200×103						158×325×177				
Instantaneous release	5I <sub>n</sub> or 10I <sub>n</sub>										
Reference ambient temperature	40°C										
Working ambient temperature	-40°C ~ +70°C, no derating at +50°C										
Altitudes	5000m										

### Applicable Working Environment and Compensation Coefficient

Ambient temperature	10°C	20°C	25°C	30°C	40°C	50°C	60°C	70°C
Compensation coefficient	1.17	1.14	1.12	1.06	1	0.96	0.87	0.76

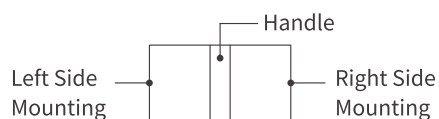
### Derating Coefficient of Technical Parameters Based On Altitude

When the altitude is below 2000m, the characteristics of the circuit breaker will not be affected. If the altitude exceeds this value, the decrease in air insulation characteristics and cooling capacity must be considered. The following table provides the applicable correction values for altitudes exceeding 2000m.

Altitude (m)	2000	2500	3000	3500	4000	4500	5000
Rated current	1I <sub>n</sub>	0.99I <sub>n</sub>	0.98I <sub>n</sub>	0.97I <sub>n</sub>	0.96I <sub>n</sub>	0.95I <sub>n</sub>	0.94I <sub>n</sub>
Rated voltage	1U <sub>e</sub>	0.95U <sub>e</sub>	0.88U <sub>e</sub>	0.85U <sub>e</sub>	0.82U <sub>e</sub>	0.8U <sub>e</sub>	0.75U <sub>e</sub>
Rated power frequency withstand voltage	1U	0.95U	0.88U	0.85U	0.82U	0.8U	0.75U

### Accessory Table

Accessory code	Accessory name	EKM7-320	EKM7-630
		3P	3P
00	No	-	-
08	Alarm contact		
10	Shunt release		
18	Shunt release + Alarm contact		
20	Single auxiliary contact		
27	Dual auxiliary contacts		
28	Single auxiliary contact + Alarm contact		
29	Dual auxiliary contacts + Alarm contact		
30	Under voltage release		
38	Under voltage release + Alarm contact		
40	Shunt release + Single auxiliary contact		
41	Shunt release + Dual auxiliary contacts		
48	Shunt release + Auxiliary alarm		
50	Shunt release + Under voltage release		
60	Two sets of single auxiliary contacts		
61	Single auxiliary contact + Dual auxiliary contacts		
62	Two sets of dual auxiliary contacts		
68	Single auxiliary contact + Auxiliary alarm		
69	Dual auxiliary contact + Auxiliary alarm		
70	Under voltage release + Single auxiliary contact		
71	Under voltage release + Dual auxiliary contact		
78	Under voltage release + Auxiliary alarm		

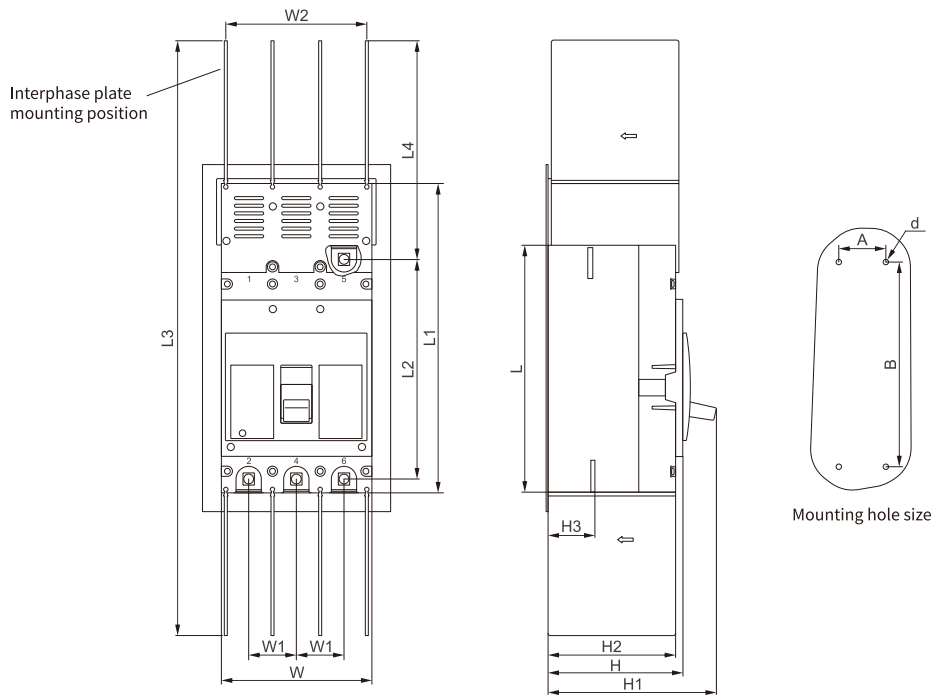


- Alarm contact
- Single auxiliary contact
- Dual auxiliary contacts

- Under voltage release (mechanical)
- Shunt trip (mechanical)

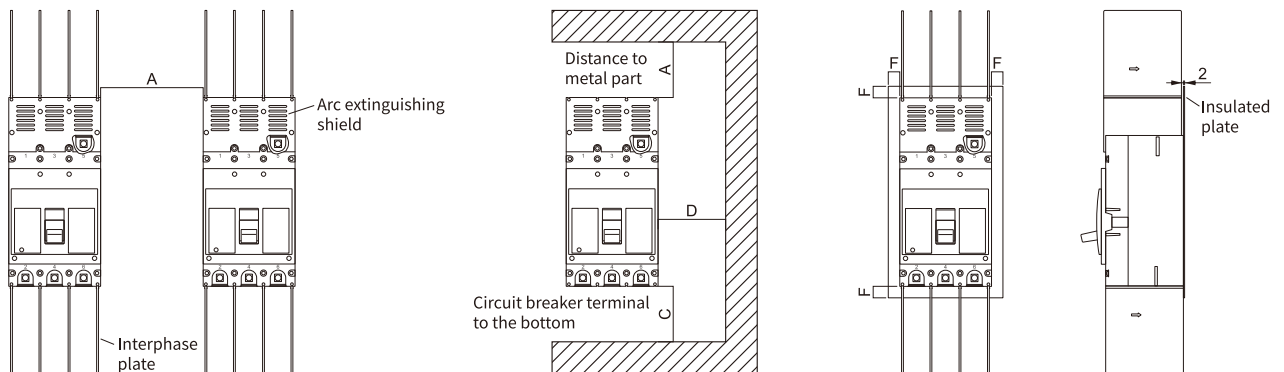


### Overall Dimensions and Mounting Dimensions



Circuit breaker model	Dimensions (mm)														
	W	W1	W2	L	L1	L2	L3	L4	H	H1	H2	H3	A	B	d
EKM7-320	120	38	110	200	264	178	657	272	108	137	100	31.5	38	161	Ø5.5
EKM7-630	158	50	148	260	325	231	625	229	142	177	134	50	50	215	Ø6.5

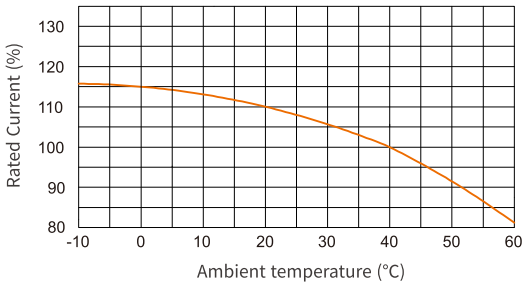
### Mounting Diagram



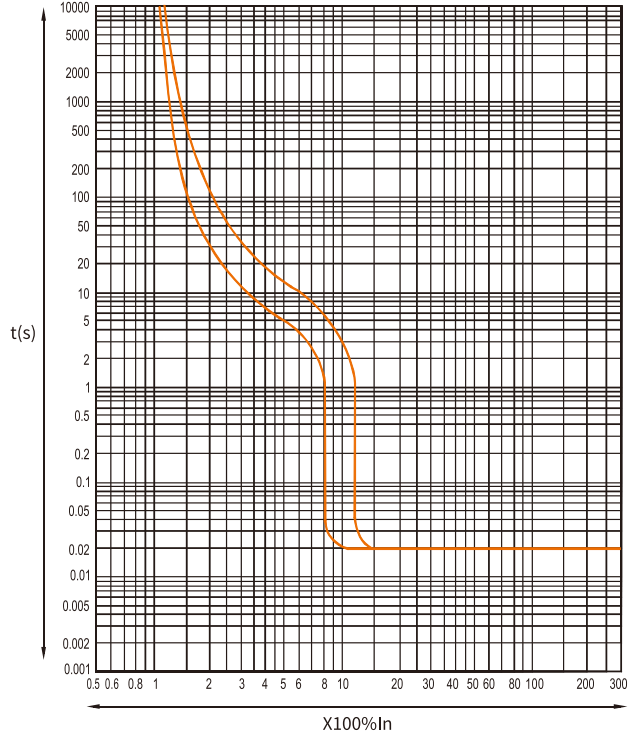
Circuit breaker model	Dimensions (mm)				
	A	B	C	D	F
EKM7-320	50	50	50	50	25
EKM7-630	50	50	50	50	20

Tripping Curve

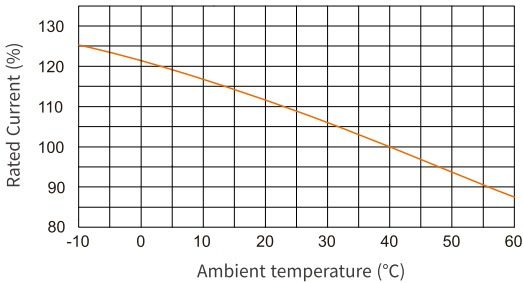
EKM7-320 Current-Temperature Characteristic



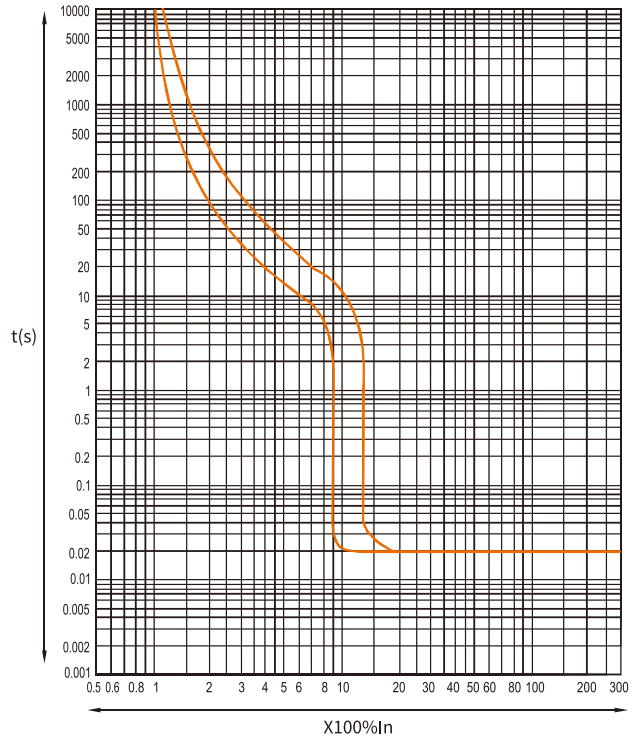
EKM7-320 Time/current Characteristic Curve



EKM7-630 Current-Temperature Characteristic



EKM7-630 Time/current Characteristic Curve



# EKM7DC MCCB 1500V



Non-Polarity DC MCCB

Standard\_IEC60947-2



## Application

EKM7DC series DC molded case circuit breaker (referred to as circuit breaker), has a rated operating voltage to DC1500V, rated insulation voltage 1500V, rated impulse withstand voltage up to 12kV, and rated current 100A~1600A.

The circuit breaker can be vertically or horizontally installed.

It complies with the following standards:  
IEC 60947-1 and IEC 60947-2.

## Working conditions

- The altitude is 2000m and below, high altitude capacity reduction coefficient is shown in the capacity reduction coefficient table; The temperature of the surrounding medium shall not be higher than +70°C (+45°C for Marine products) and not lower than -25°C (below -25°C, LC low-temperature products need to be customized), and the average value within 24h shall not exceed +35°C. When it is higher than +50°C, the user needs to use the capacity reduction coefficient, as shown in Table.
- Storage temperature -40°C ~+75°C.
- The relative humidity of the air at the installation site does not exceed 50% at the maximum temperature of +40°C, and can have a higher relative humidity at lower temperatures, such as 90% at 20°C. Special measures should be taken for occasional condensation due to temperature changes.
- The maximum inclination is  $\pm 22.5^\circ$ .  
Be used in a medium without explosion risk, and the medium is not sufficient to corrode metal and destroy insulation gas and conductive dust.
- Be used where with no rain and snow hit.

## Selection Guide

EKM7DC - 630 H / 2 300 Z 250A

EKM7DC	630	H	2	300	Z	630A
↓	↓	↓	↓	↓	↓	↓
Model	Frame size	Code of control circuit source voltage	Pole number	Trip mode and internal accessories	Special Application	Rated current
Molded case circuit breaker for solar products	320,400, 630,1600	Breaking capacity	2P,3P,4P	2: Electronic only (instantaneous release) 3: Thermo-Magnetic (compound)	Terminal cover	See the parameter table for details

Notes: EKM7DC-320 and above frame size are with terminal cover

### Technical Parameters

Molded case circuit breaker	EKM7DC-320	EKM7DC-400	EKM7DC-630	EKM7DC-1600	
Frame size current In	100,125,140,160,180,200,225,250,280,315A	250,315,350,400A	400,500,630A	800,1000,1250,1500,1600A	
Pole number	2P	2P	2P	3P,4P	
Rated working voltage Ue (V), AC	DC750V, DC1000V, DC1200V, DC1500V				
Rated insulation voltage Ui (V)	1600V				
Rated impulse withstand voltage Uimp (kV)	12kV				
Rated operating short-circuit capacity Ics=Icu (kA)	DC750V	85	85	85	50
	DC1000V	50	50	50	30
	DC1200V	35	35	35	15
	DC1500V	20	20	20	10
Machine life (times)	4000	4000	4000	4000	2500
Electrical life (times)	1000	1000	1000	1000	500
Arcing distance (mm)	50 (plus arc suppression cover)				
Instantaneous tripper	5In or 10In				

### Capacity Reduction Coefficient

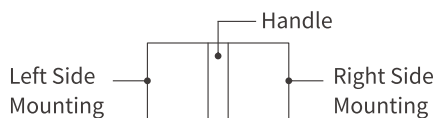
Model	Frame size rated current(A)	50°C	55°C	60°C	65°C	70°C
EKM7DC-320/2300	250	1	0.95	0.93	0.91	0.88
EKM7DC-400/2300	400	1	0.93	0.91	0.89	0.85
EKM7DC-630/2300	630	1	0.92	0.90	0.89	0.83
EKM7DC-1600/2300	1600	1	0.936	0.915	0.894	0.873

### High Altitude Capacity Reduction

Altitude (m)	2000	2500	3000	3500	4000	4500	5000
Working current correction coefficient	1	1	0.98	0.97	0.96	0.95	0.94
Short-circuit breaking capacity correction coefficient	1	1	0.83	0.77	0.71	0.67	0.63
Power frequency withstand voltage correction coefficient	1	1	0.89	0.85	0.80	0.77	0.73

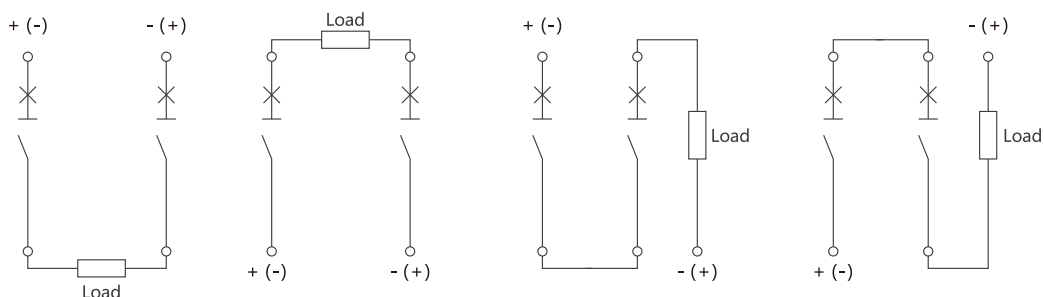
### Accessory Table

Accessory code	Accessory name	EKM7DC-320	EKM7DC-400/630	EKM7DC-1600	
		2P	2P	3P	4P
00	No	-	-	-	-
08	Alarm contact				
10	Shunt release				
18	Shunt release + Alarm contact	-			
20	Single auxiliary contact				
27	Dual auxiliary contacts				
28	Single auxiliary contact + Alarm contact				
29	Dual auxiliary contacts + Alarm contact	-			
30	Under voltage release				
38	Under voltage release + Alarm contact	-			
40	Shunt release + Single auxiliary contact	-			
48	Shunt release + Auxiliary alarm	-			
62	Two sets of dual auxiliary contacts	-			
68	Single auxiliary contact + Auxiliary alarm				
69	Dual auxiliary contact + Auxiliary alarm	-			
70	Under voltage release + Single auxiliary contact	-			



- Alarm contact
- Under voltage release (mechanical)
- Single auxiliary contact
- Shunt trip (mechanical)
- Dual auxiliary contacts

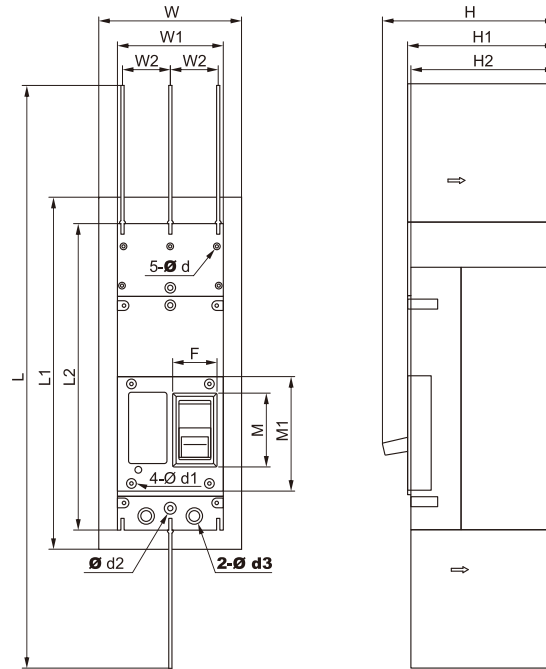
### DC Circuit Breaker Connection Mode



Note: (1) + positive power supply, - negative power supply.

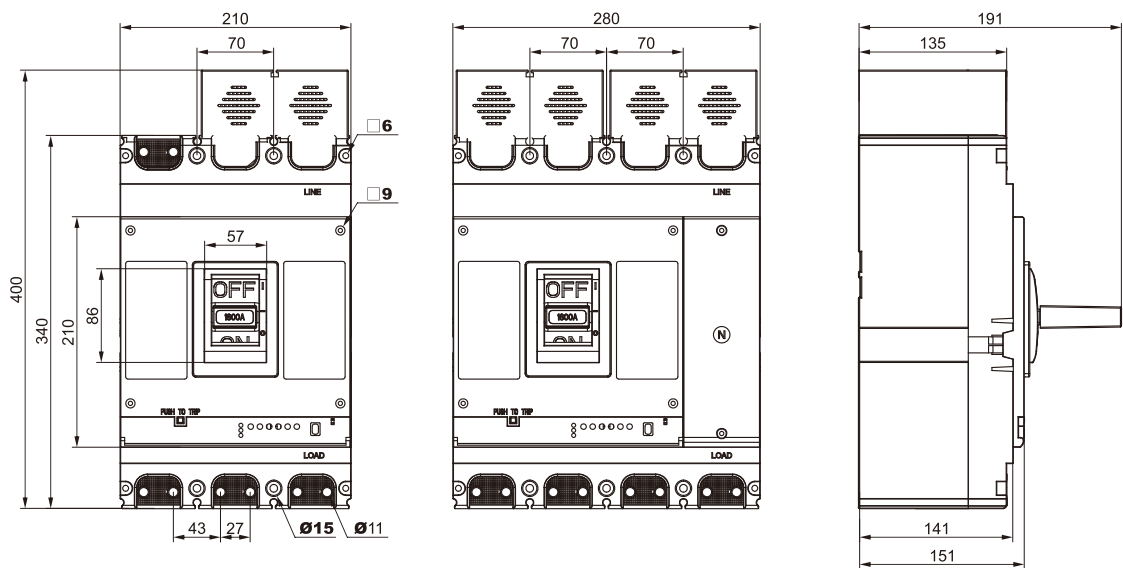
The product has non-polar wiring characteristics, it can meet different wiring needs.

## Overall Dimensions and Mounting Dimensions (mm)

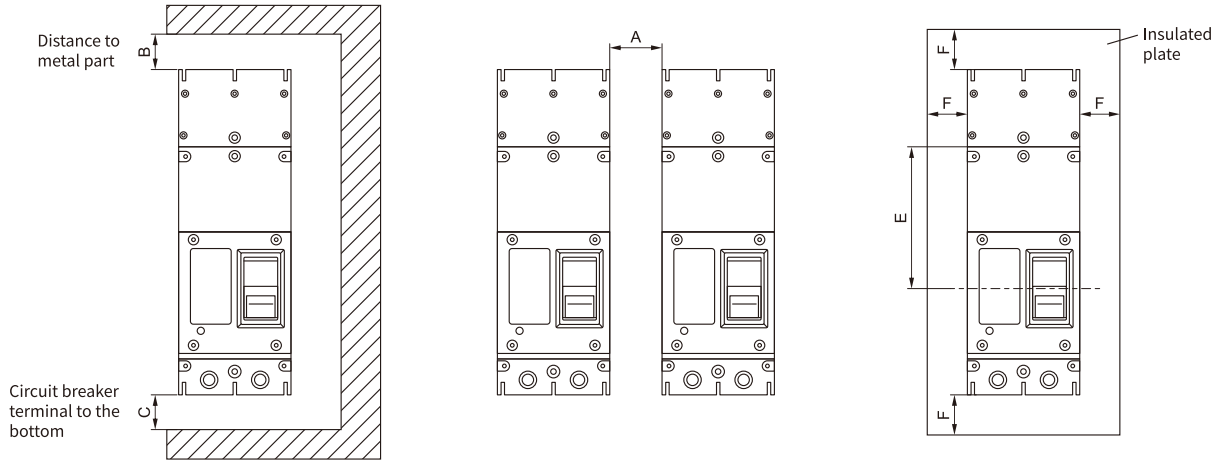


Model	W	W1	W2	L	L1	L2	M	M1	F	H	H1	H2	d	d1	d2	d3
EKM7DC-320	/	99	38	465	/	245	51	101	28	135	118	/	/	7	10	12.5
EKM7DC-400	148	110	49	605	365	319	76	119	45	178	154	150	8	11	13	19
EKM7DC-630	148	110	49	605	365	319	76	119	45	178	154	150	8	11	13	19

EKM7DC-1600

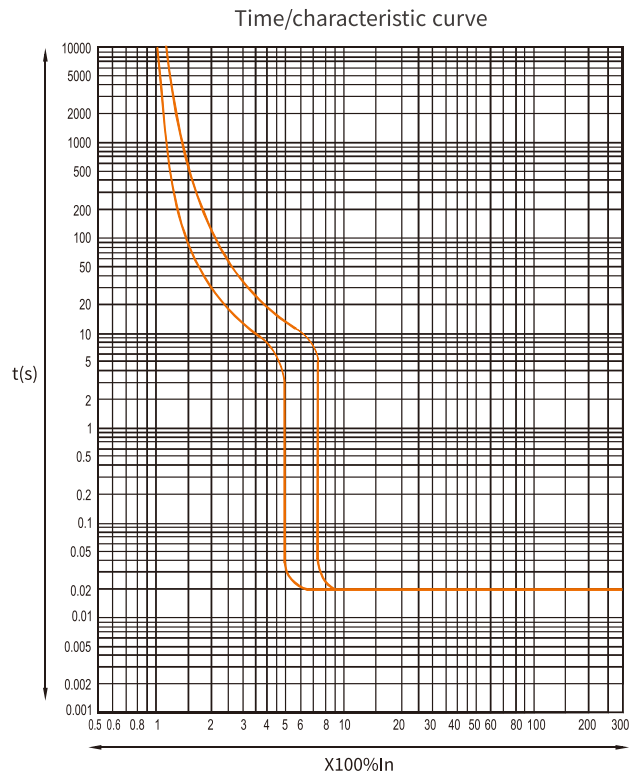


## Mounting Diagram



Model	Dimensions (mm)					
	A	B	C	D	E	F
EKM7DC-320	30	30	30	30	93.8	25
EKM7DC-400	50	50	50	50	182.5	25
EKM7DC-630	50	50	50	50	182.5	25
EKM7DC-1600	100	110	110	50	162	110

## Tripping Curve





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	400A 2500A	D: drawout type F: fixed type	AC230V	Horizontal wiring
	3200		630A 2900A		AC400V	
	6300	4P: four-pole	800A 3200A		DC220V	Vertical wiring
			1000A 3900A		DC110V	
			1250A 4000A			
			1600A 5000A			
		2000A 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"/> AC400V <input type="checkbox"/> DC220V <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 $I_{nm}$ (A)		2000	3200	6300	
Pole number		3,4	3,4	3,4	3
Rated current $I_n$ (A)		400, 630, 800, 1000 1250, 1600, 2000	2000, 2500 2900, 3200	4000, 5000	6300
Rated voltage $U_e$ (V)		400, 690	400, 690	400, 690	400, 690
Insulation voltage $U_i$ (V)		1000	1000	1000	1000
Impulse withstand voltage $U_{imp}$ (V)		12000	12000	8000	8000
Power frequency withstand voltage $U$ (V)		AC3500 50HZ	AC3500 50HZ	AC3500 50HZ	AC3500 50HZ
Rated current of N-pole $I_N$ (A)		50% $I_n$	50% $I_n$	50% $I_n$ , 100% $I_n$	50% $I_n$ , 100% $I_n$
Ultimate breaking capacity $I_{cu}$ (kA)	AC400V	80	100	120	120
	AC690V	50	65	85	85
Running breaking capacity $I_{cs}$ (kA)	AC400V	50	80	100	100
	AC690V	40	65	75	75
Short-current making capacity $I_{cm}$ (kA)	AC400V	176	220	264	264
	AC690V	105	143	165	165
Short-time withstand current(1s)(RMS) $I_{cw}$ (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

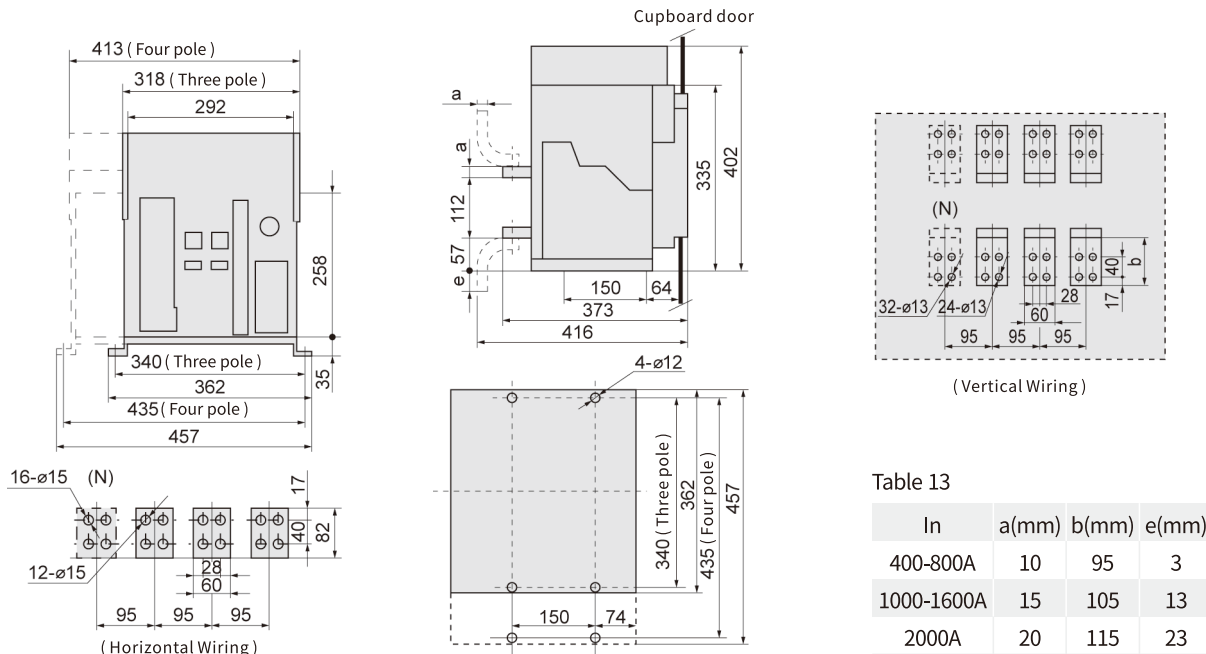


Fig.10 Outline and installation dimensions of fixed type circuit breaker (EKA1-2000, 2000/4)

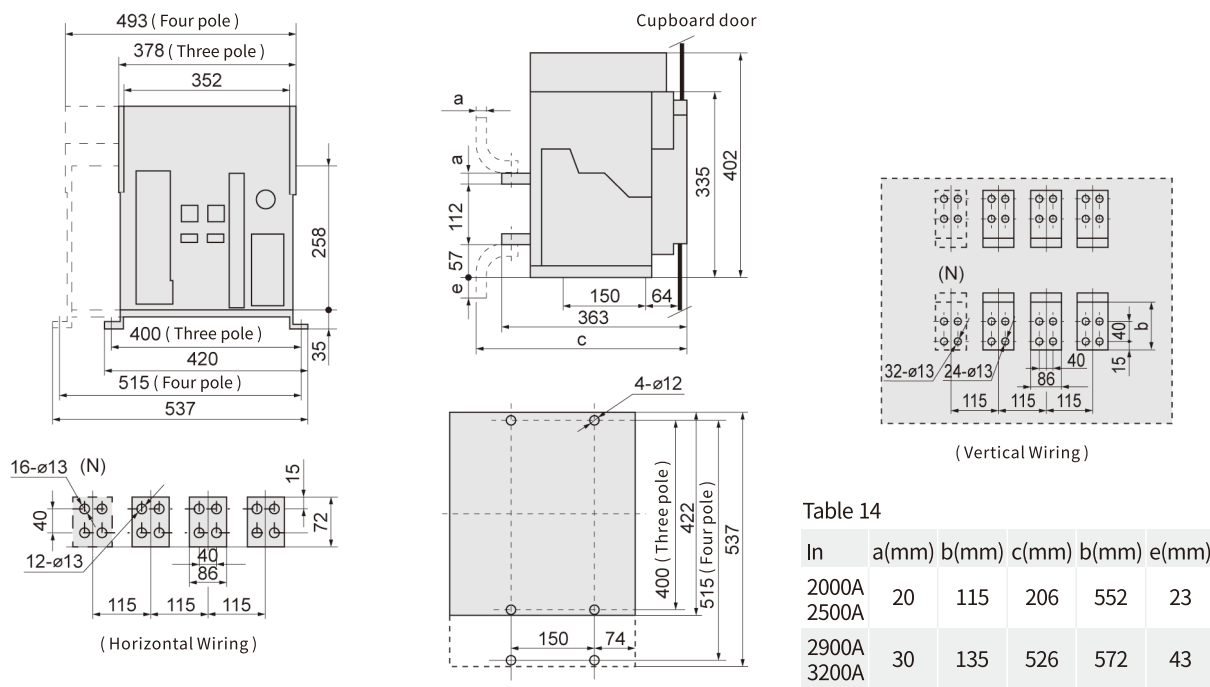


Fig.11 Outline and installation dimensions of fixed type circuit breakers (EKA1-3200, 3200/4)

Overall and Mounting Dimensions

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

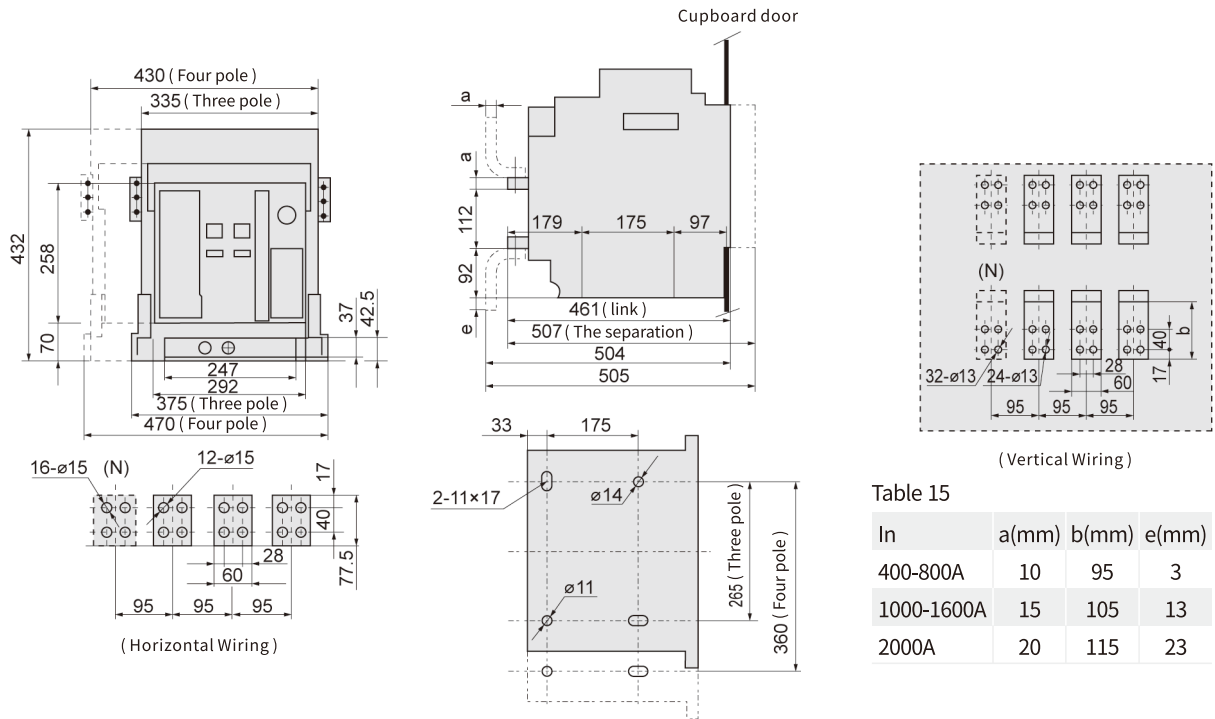


Fig.12 Outline and installation dimensions of drawout type circuit breaker (EKA1-2000, 2000/4)

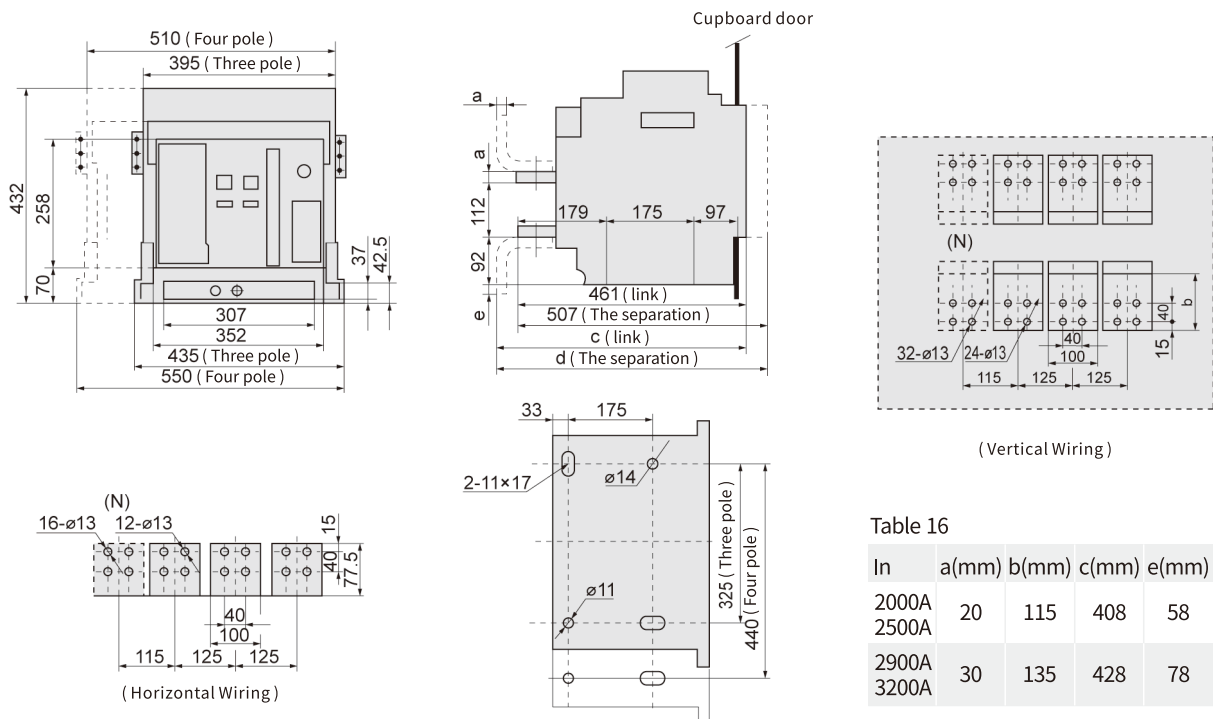
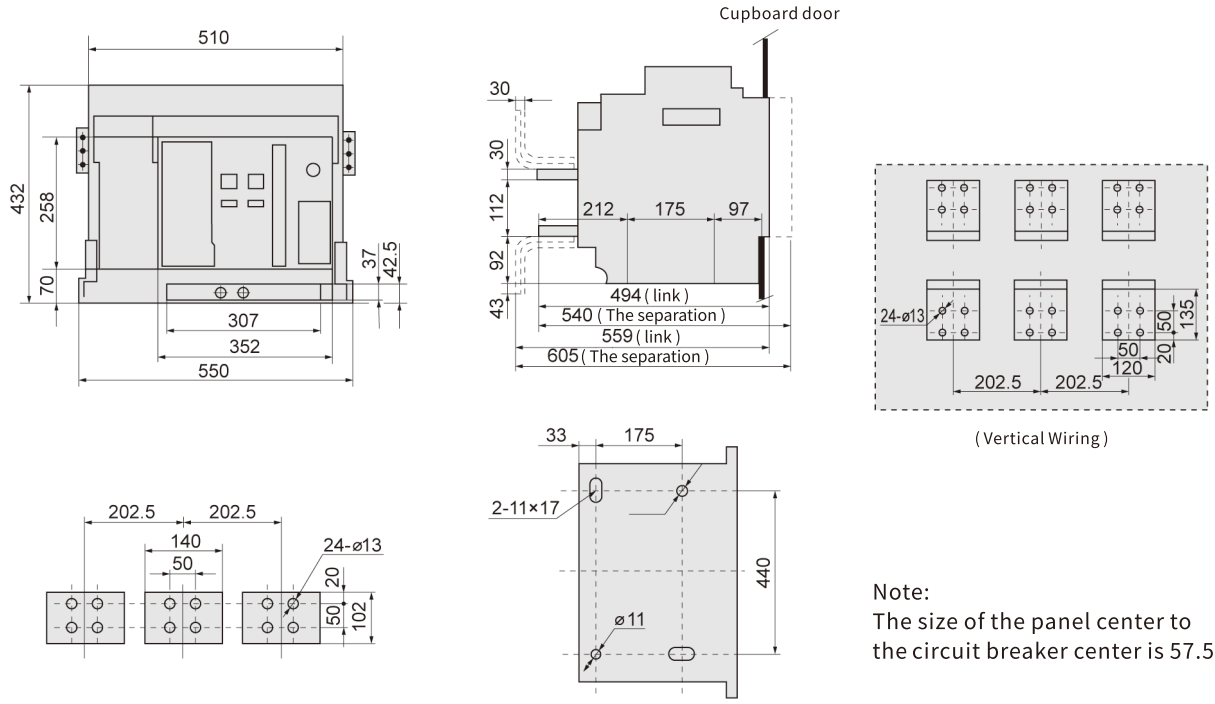


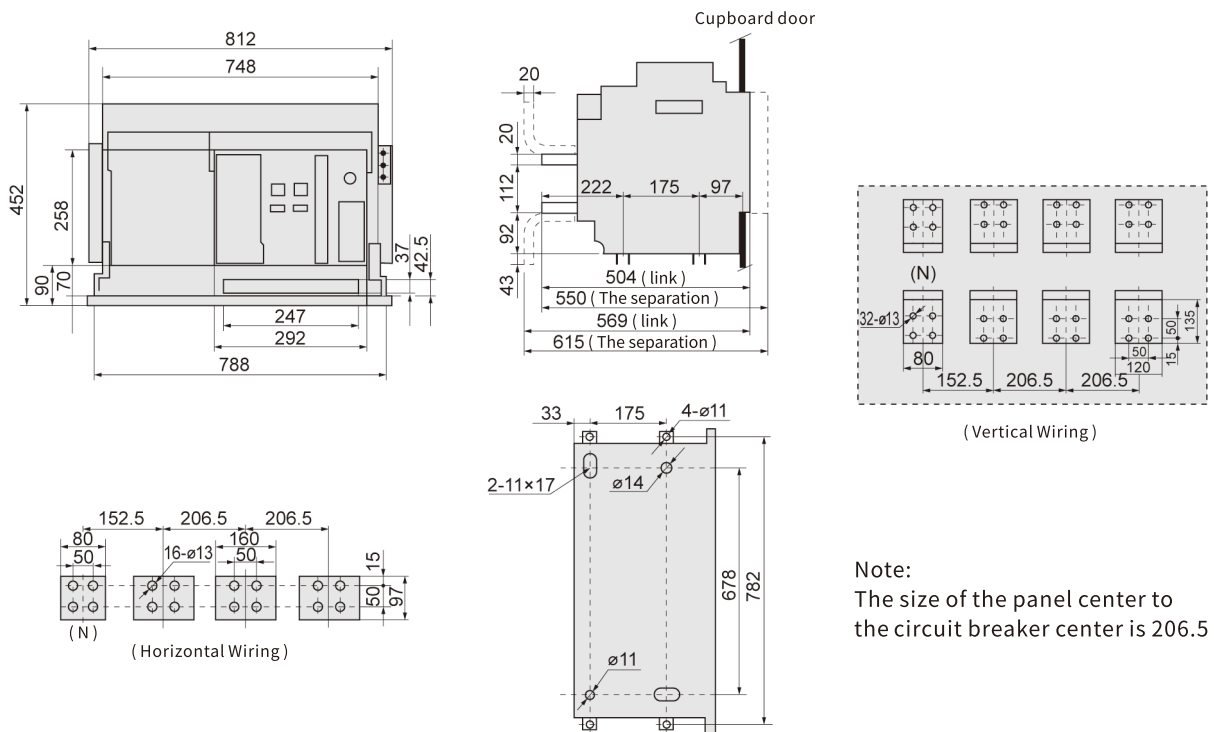
Fig.13 Outline and installation dimensions of drawout type circuit breaker (EKA1-3200, 3200/4)

Overall and Mounting Dimensions



Note:  
The size of the panel center to the circuit breaker center is 57.5

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



Note:  
The size of the panel center to the circuit breaker center is 206.5

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

Overall and Mounting Dimensions

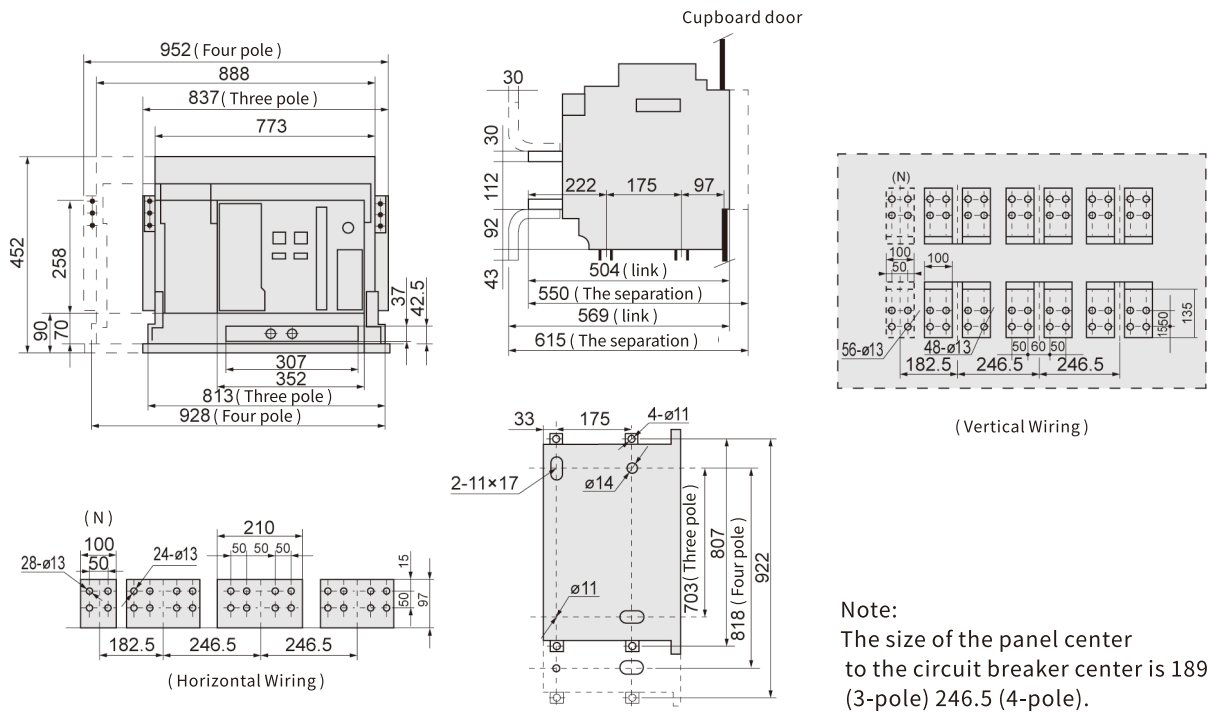


Fig.16 Outline and installation dimensions of drawout type circuit breaker (EKA1-6300, 6300/4 In=4000, 5000)

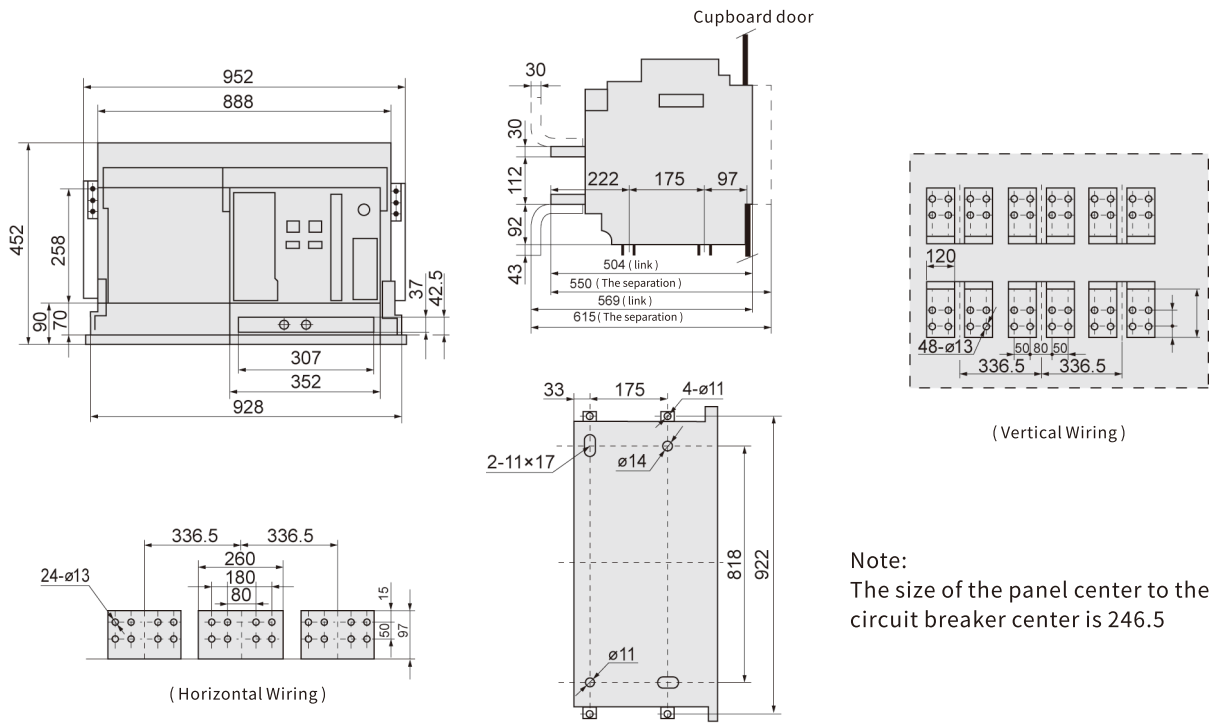
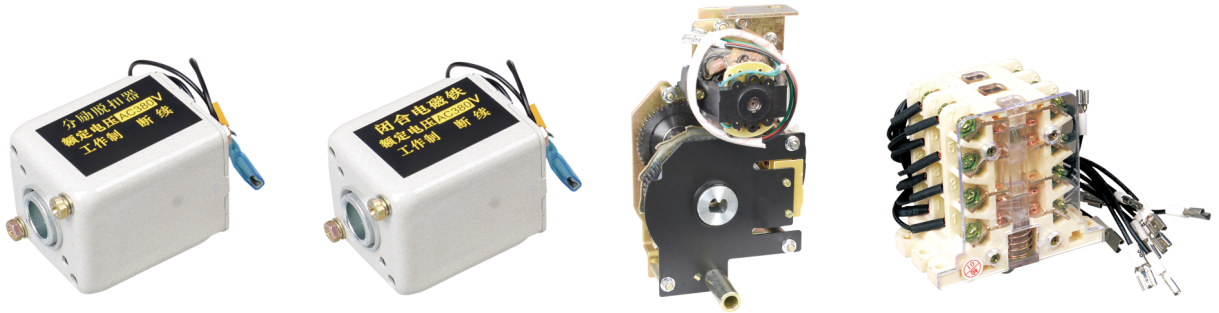


Fig.17 Outline and installation dimensions of drawout type circuit breaker (EKA1-6300 In=6300A)

## Accessories

### Standard Accessories




Item	Function	Us
Shunt release	Let the circuit breaker disconnect reliably and remotely at circuit voltage (70%-110%)Us	AC230V AC400V DC220V DC110V
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	
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.	

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