ETEK®

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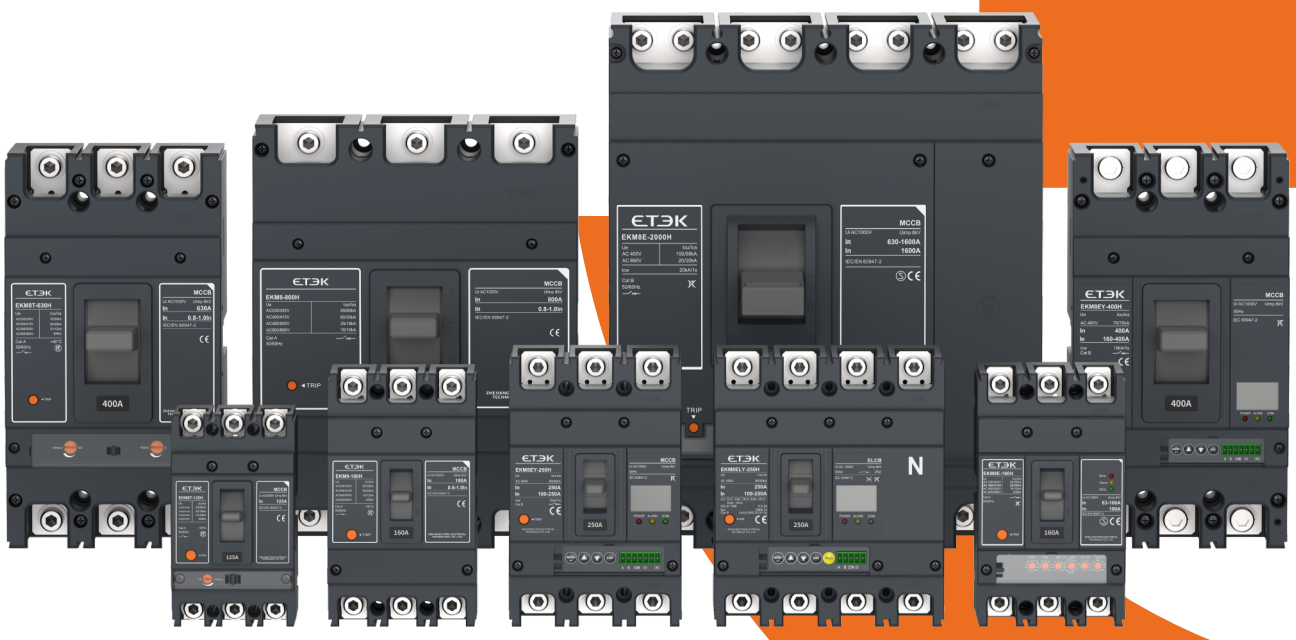
INDUSTRIAL POWER DISTRIBUTION ELECTRIC

- MCCB
- ACB

Always for your safety



ZHEJIANG ETEK ELECTRICAL TECHNOLOGY CO.,LTD.

Ver. 2025.1

Always for your safety

COMPANY INTRODUCTION

Zhejiang ETEK Electrical Technology Co., Ltd. is a professional manufacturing company specializing in the research, development, production, and sales of low-voltage electrical appliances. Established in 2011 and headquartered in Wenzhou, Zhejiang Province, ETEK Electric operates two modern manufacturing bases in Wenzhou and Wuhu, covering an area of 40,000 square meters. The company employs over 500 staff, including more than 50 R&D and technical professionals.

ETEK Electric has multiple production workshops for mold design, parts manufacturing, welding, and assembly. Additionally, it operates multiple automated production lines for MCB and RCCB. Its product portfolio includes MCB, RCCB, RCBO, AFDD, MCCB, ACB, EV Chargers, and Photovoltaic DC products, which are widely used in residential, commercial, and industrial sectors.

ETEK Electric has established its own low-voltage electrical testing center, where testing projects meet international IEC standards. The company has obtained ISO9001, ISO14001, and ISO45001 certifications, and its products are certified by international standards such as CB, TUV, VDE, CE, RoHS, among others.

With over 100 national patents, ETEK Electric continues to master core technologies in circuit breakers and remains committed to building its independent brand. The "ETEK" trademark is registered in over 80 countries, with products exported to more than 100 regions, including Europe, South America, the Middle East, Africa, and Southeast Asia.

Additionally, ETEK Electric supports OEM, ODM, OBM, SKD, CKD, and other business cooperation models, offering a complete suite of services including market cultivation, technical training, and assistance with factory construction.

Looking to the future, ETEK Electric is committed to becoming a globally renowned manufacturer in the power distribution and electrical industry, safeguarding the power safety of its customers around the world and contributing to the development of green and digital energy.

Wenzhou Factory

Wuhu Factory

Corporate Culture

Values

- Integrity
- Innovation
- Focus
- Win-win

Vision

Dedicated to becoming a globally renowned manufacturer in the power distribution equipment industry.

Mission

Manufacturing safer and smarter distribution electrical products to support the development of green and digital energy

WORKSHOPS

CERTIFICATION

EKM8

EKM8T

EKM8E

EKM7DC

CONTENTS

EKM8 MCCB 125AF~2000AF

Thermal Magnetic Fixed MCCB

Standard_ IEC60947-2

EKM8-125H 3P

EKM8-160H 3P

EKM8-250H 3P

EKM8-400H 3P

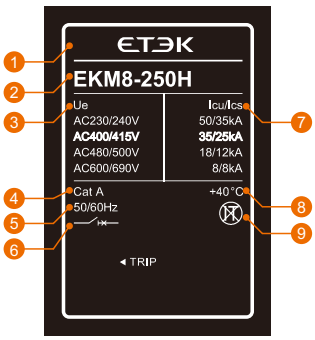
EKM8-800H 3P

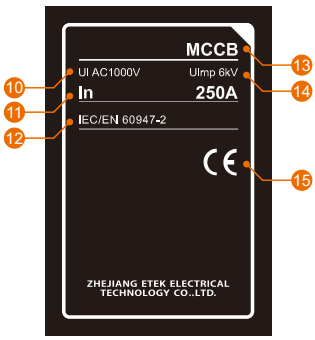
Product Overview

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 Ue (V/AC): 230/400/415/690
- Breaking capacity code: C, S, H, UH
- Number of poles: 1P, 2P, 3P, 4P
- Trip unit type: thermal magnetic type
- Installation method: Fixed type; plug-in type

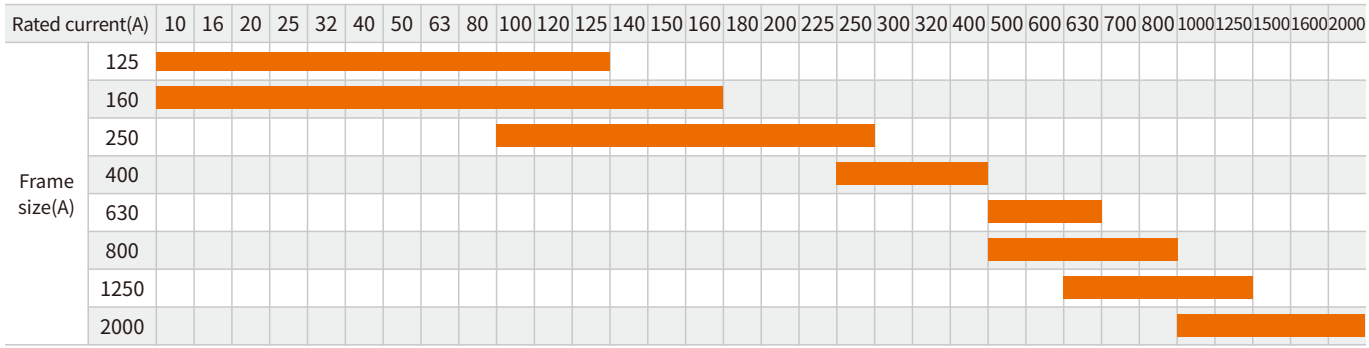
Nameplate Interpretation





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

Comparison Table of Frame Sizes and Rated Current



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	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
	UH					■	■	■	■	■	■	■	■	■						

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
EKM8	- 160	H	P1	/	4	3	00
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	H: High breaking type	ZY2：Turning handle (hand-operated eccentric type-round handle)		3: 3P	3: Thermal + Electromagnetic release	
	800: 800A		ZF2：Turning handle (hand-operated eccentric type-square handle)				
	1250: 1250A	UH: Extra-high breaking type			4: 4P		
	2000: 2000A		Z3:Turning handle (Hand-operated one-piece type) (Only available for 125, 160, 250)				

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
				P: Coupling row (extended copper row)		160: 16,20,25,32,40, 50,63,80,100,125, 160A
				Z1: Rear connection (fixed type)		
	B: There is no over-current protection at pole N and N-pole operates with other three poles.			Z2Q: Plug-in front connection (split type)		250: 100,125,160, 180,200,225,250A
		V: Low temperature rise model 50K		Z2H: Plug-in rear connection (split type)		400: 250,315,350, 400A
				Z3Q: Plug-in front connection (one-piece)		
2: motor protection	C: There is over-current protection at pole N and N-pole operates with other three poles.			Z3H: Plug-in rear connection (one-piece)	Z: Terminal cover	630: 400,500,630A
				DF: Draw-out type front connection		800: 500,630,700, 800A
		VI: Low temperature rise model 40K		DR: Draw-out type rear connection		
	D: There is over-current protection at pole N and the N pole is always connected.			K: Connection frame type		1250: 800,1000, 1250A
				JK: Inlet only: Connection frame type		2000: 1000,1250, 1500,1600,2000A
				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

Model		EKM8-125			EKM8-160				EKM8-250			
Rated frame current Inm (A)		125			160				250			
Rated operational current In (A)		10,16,20,25,32,40,50,63,75, 80,100,120,125A			10,16,20,25,32,40,50,63,75, 80,100,120,125,140,150,160A				100,120,125,140,150,160, 180,200,225,250A			
Rated insulation voltage Ui (V)		1000V			1000V				1000V			
Rated impulse withstand voltage Uimp (kV)		8kV			8kV				8kV			
Rated operational voltage Ue (V), AC 50/60Hz		230V(1P); 240V(3P/4P); 400V(2P/3P/4P); 690V(3P/4P)			230V; 400V; 690V				230V; 400V; 690V			
Breaking capacity code		C	S	H	C	S	H	UH	C	S	H	UH
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	-	20	28	35	-
	400/415V	**7.5**	**15**	**18**	**10**	**18**	**25**	**36**	**10**	**18**	**25**	**36**
	600/690V	3	4	8	4	4	8	-	4	4	8	-
Rated ultimate short circuit breaking capacity Icu (kA)	230/240V	15	25	35	30	40	50	-	30	40	50	-
	400/415V	**10**	**18**	**25**	**15**	**25**	**35**	**36**	**15**	**25**	**35**	**36**
	600/690V	5	6	8	6	8	8	-	6	8	8	-
Standards		IEC 60947-2			IEC 60947-2				IEC 60947-2			
Utilization category		A			A				A			
Isolation function		■			■				■			
Trip unit type		Thermo magnetic			Thermo magnetic				Thermo magnetic			
Mechanical life (times)		8500			8500				7000			
Electrica llife (times)		1500			1500				1000			

Poles		1P	2P	3P	4P	2P	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	-	-	-	-	-	-	-	-	-

	EKM8-400			EKM8-630			EKM8-800	EKM8-1250	EKM8-2000
	400			630			800	1250	2000
	250,300,320,400A			500,600,630A			500,630,700,800A	630,700,800,1000,1250A	1000,1250,1600,2000A
	1000V			1000V			1000V	1000V	1000V
	8kV			8kV			8kV	8kV	8kV
	400V; 690V			400V; 690V			400V; 690V	400V; 690V	400V; 690V
	S	H	UH	S	H	UH	H	H	H
		3P,4P		3P,4P			3P,4P	3P,4P	3P,4P
	-	50	-	-	50	-	60	60	85
	25	**35**	**50**	**25**	**35**	**50**	**50**	**50**	**50**
	-	10	-	-	10	-	15	15	25
	-	75	-	-	75	-	85	85	100
	35	**50**	**50**	**35**	**50**	**50**	**65**	**65**	**85**
	-	10	-	-	10	-	15	15	25
	IEC 60947-2			IEC 60947-2			IEC 60947-2	IEC 60947-2	IEC 60947-2
	A			A			A	A	A
	■			■			■	■	■
	Thermo magnetic			Thermo magnetic			Thermo magnetic	Thermo magnetic	Thermo magnetic
	4000			4000			2500	2500	2500
	1000			1000			500	500	500

	3P	4P	3P	4P	3P	4P	3P	4P	3P	4P
	■	■	■	■	■	■	■	■	■	■
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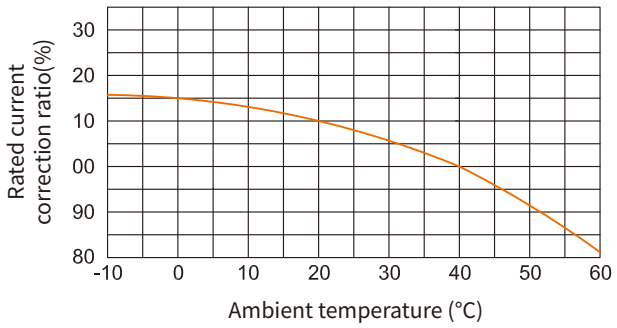
Current-Temperature Characteristics



Derating of Temperature

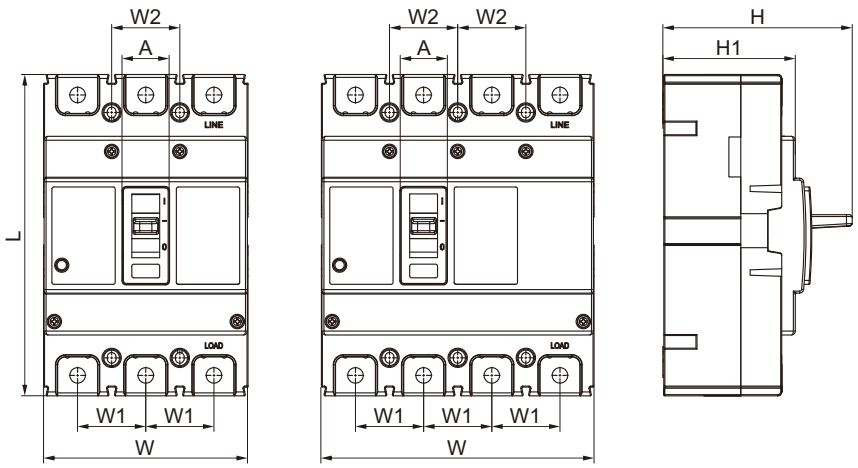
Model	Ambient temperature (40°C product)														
	-10°C	-5°C	0°C	5°C	10°C	15°C	20°C	25°C	30°C	35°C	40°C	45°C	50°C	55°C	60°C
EKM8-125	1.18	1.15	1.15	1.1	1.08	1.06	1.04	1.03	1.02	1.01	1	0.977	0.957	0.936	0.915
EKM8-160	1.22	1.2	1.15	1.14	1.12	1.09	1.07	1.05	1.03	1.01	1	0.977	0.957	0.936	0.915
EKM8-250	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

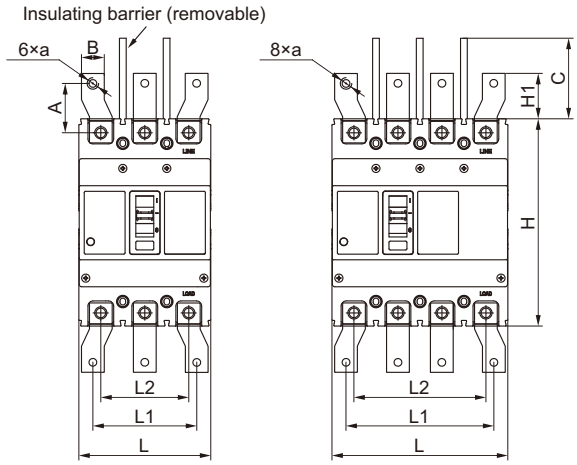
Altitude (m)	2000	2500	3000	4000	4500	5000
Power frequency withstand voltage (V)	2500	2500	2250	1950	1775	1625
Insulation voltage (V)	1000	1000	900	780	710	650
Maximum operationnal voltage (V)	400	400	350	312	284	260
Correction coefficient of operating current (In)	1	1	0.98	0.95	0.92	0.9

Overall Dimension (mm)



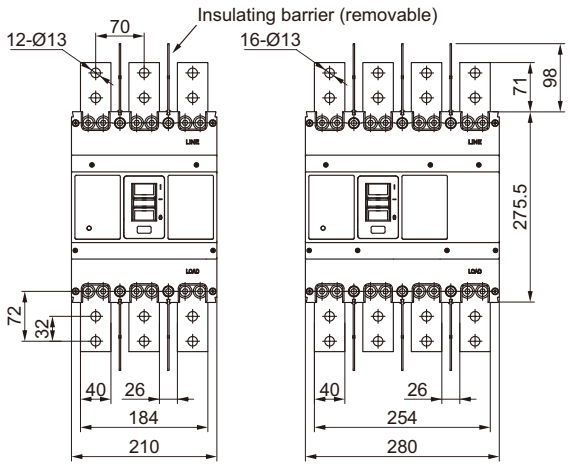
Model	Poles	W	L	H	H1	W1	W2	A
EKM8-125	1	25	130	94.5	68	25	25	24
	2	50	130	94.5	68	25	25	24
	3	75	130	94.5	68	25	25	24
	4	100	130	94.5	68	25	25	24
EKM8-160	2	60	155	94(S)/108(H)	68(S)/82(H)	30	30	25
	3	90	155	94(S)/108(H)	68(S)/82(H)	30	30	25
	4	120	155	94(S)/108(H)	68(S)/82(H)	30	30	25
EKM8-250	3	105	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)

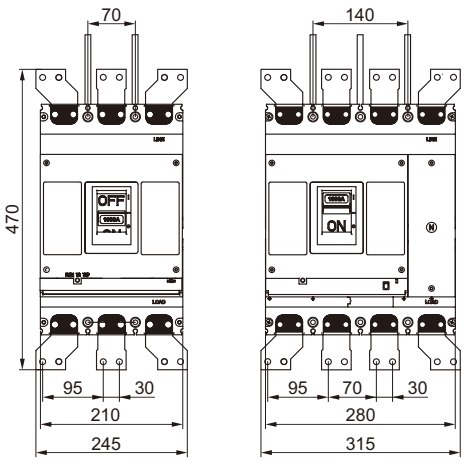


Model	Poles	L	L1	L2	H	H1	A	B	C	a
EKM8-125	3	75	68	50	130	24	24.5	15	48	M8
	4	100	93	75	130	24	24.5	15	48	M8
EKM8-160	3	90	78	60	155	21.8	24.5	15	48(S)/64(H)	M8
	4	120	108	90	155	21.8	24.5	15	48(S)/64(H)	M8
EKM8-250	3	105	84	70	165	41.8	43.5	20	48(S)/64(H)	M8
	4	140	119	105	165	41.8	43.5	20	48(S)/64(H)	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

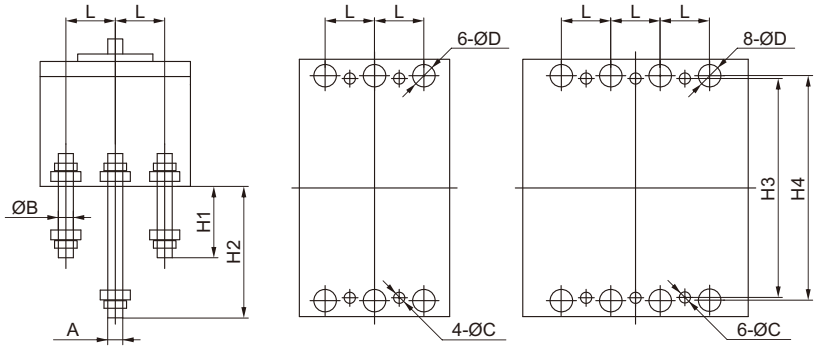
EKM8-1250



EKM8-2000

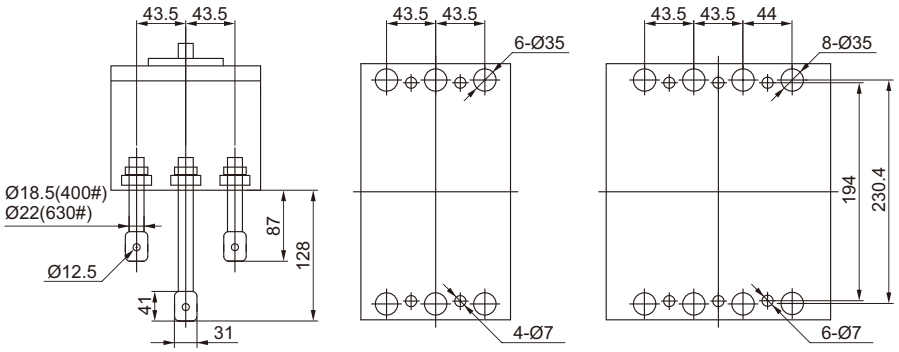


Rear Connection Installation Dimension (mm)

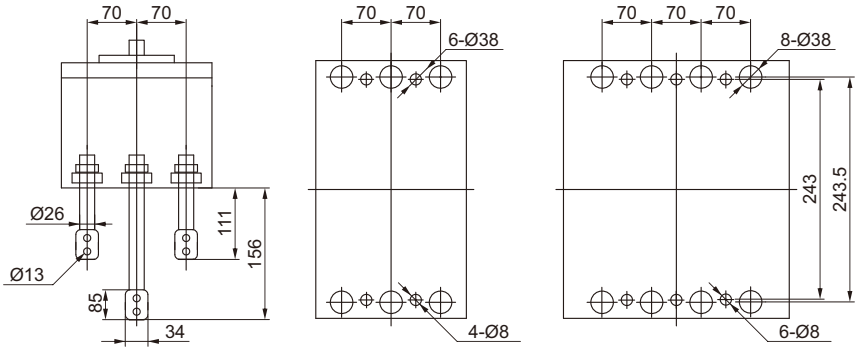


Model	L	H1	H2	H3	H4	A	B	C	D
EKM8-125	25	51	81	110	114	M8	10	4.5	13
EKM8-160	30	49	94	132	134	M8	12	4.5	15
EKM8-250	35	82	121	126	144	M12	12	4.5	15

EKM8-400/630

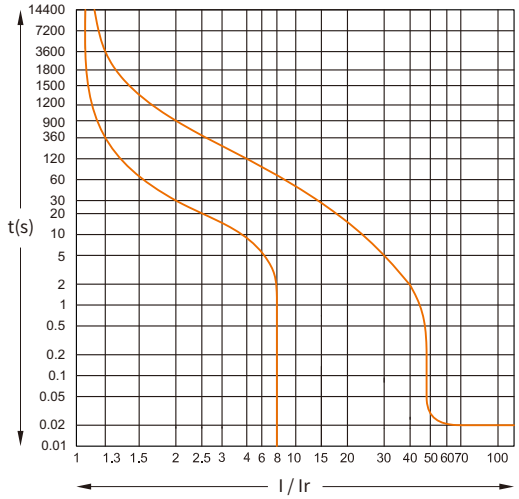


EKM8-800

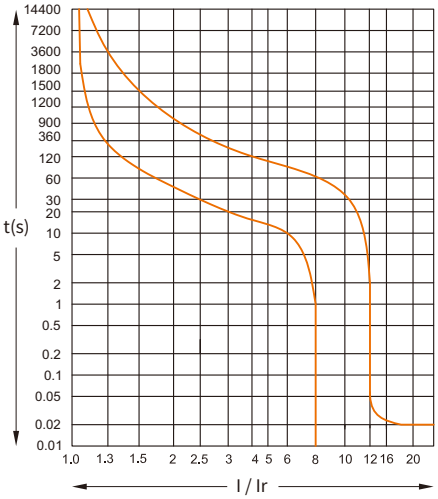


Tripping Characteristic Curve

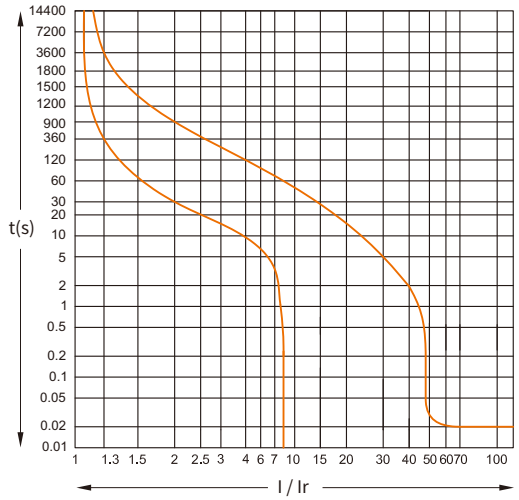
EKM8-125 (10-50A)



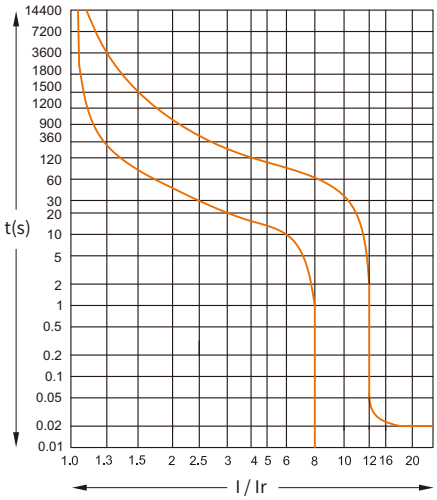
EKM8-125 (63-125A)



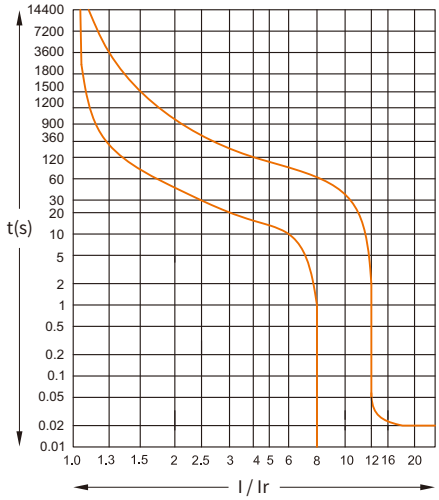
EKM8-160 (10-50A)



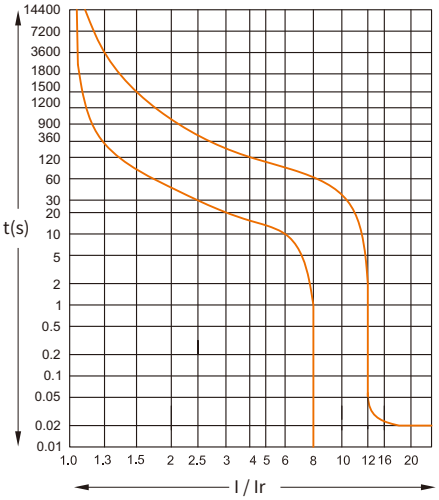
EKM8-160 (63-160A)



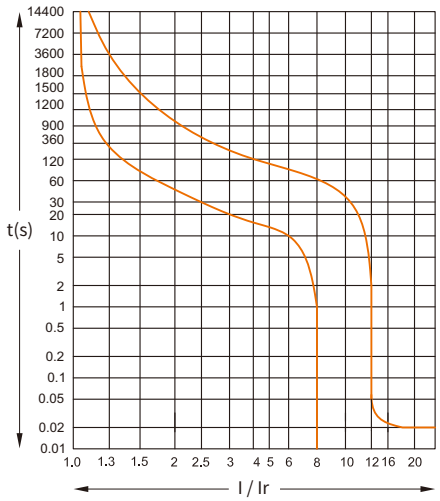
EKM8-250



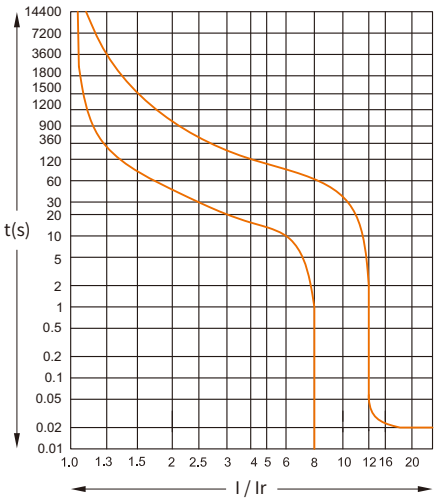
EKM8-400



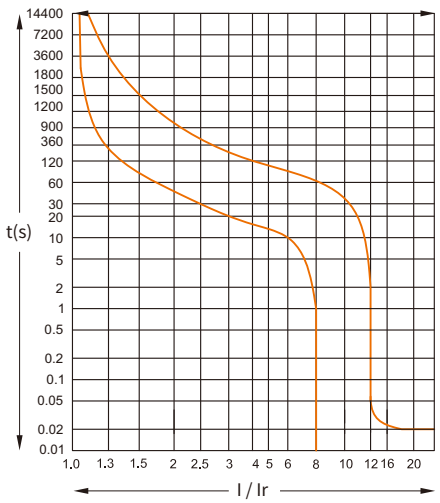
EKM8-630



EKM8-800



EKM8-1250/2000



EKM8T MCCB 125AF~1250AF

Thermo-Magnetic Double Adjustable Type MCCB

Standard_ IEC60947-2

EKM8T-125H 3P

EKM8T-160H 3P

EKM8T-250H 3P

EKM8T-400H 3P

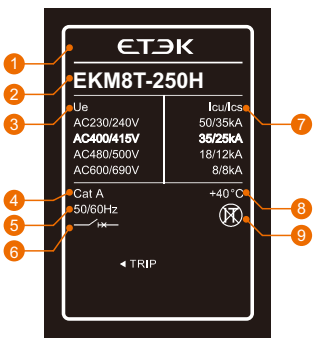
EKM8T-800H 3P

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.

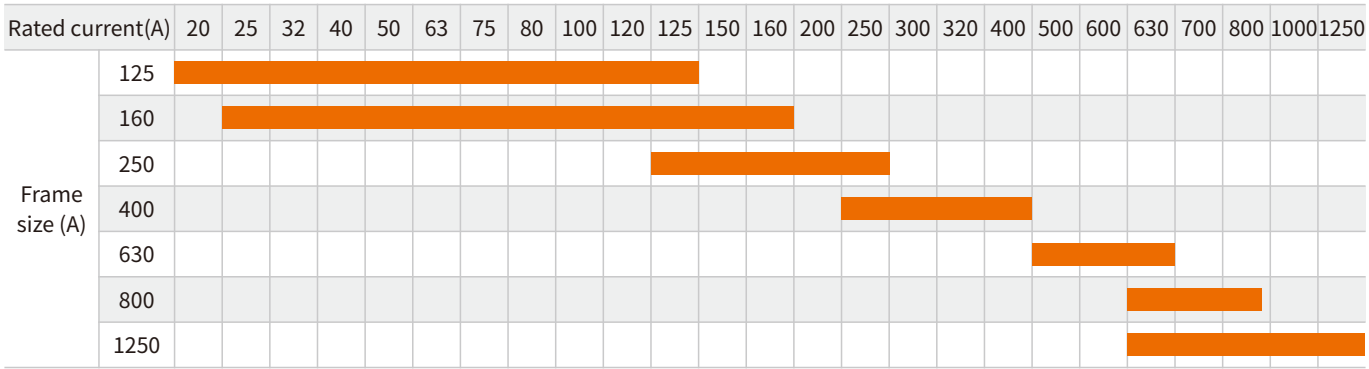
- Frame size: 125A, 160A, 250A, 400A, 630A, 800A, 1250A
- Rated operational voltage Ue (V/AC): 230/400/415/690
- Breaking capacity code: C, S, H, UH
- Number of poles: 3P, 4P
- Trip unit type: thermal magnetic type
- Installation method: Fixed type; plug-in type
- Thermal adjustable range (0.8~1)In,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

Nameplate Interpretation



1. Company LOGO
2. Product model
3. Ue: Rated operational voltage
4. CatA: Utilization category of breaker
5. Frequency of A.C.
6. Electrical symbol for circuit breaker with isolating function
7. Icu/Ics: Ultimate short circuit breaking capacity/Service short circuit breaking capacity
8. +40°C: Ambient temperature
9. Not applicable to IT systems
10. Ui: Rated insulation voltage
11. In: 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



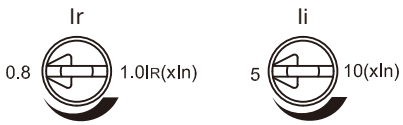
Comparison Table of Frame size, Number of Poles and Breaking Capacity

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	■	■	■	■	■	■	■	■	■	■	■	■	■	■
	UH			■	■	■	■	■	■	■	■				

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 deformationof 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 Ii (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%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
EKM8T -	160	H	P1	/ 4	3
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		
	250: 250A	S: Standard type	P2: DC6 series electric operation		
	400: 400A		ZY1：Turning handle (hand-operated center type-round handle)-(Preferred for conventional factory)		
	630: 630A	H: High breaking type	ZF1：Turning handle (hand-operated center type-square handle)	4: 4P	
	800: 800A		ZY2：Turning handle (hand-operated eccentric type-round handle)		
	1250: 1250A	UH: Extra-high breaking type	ZF2：Turning handle (hand-operated eccentric type-square handle)		
			Z3:Turning handle (Hand-operated one-piece type) (Only available for 125, 160, 250)		

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
	C: There is over-current protection at pole N and N-pole operates with other three poles.		Z2H: Plug-in rear connection (split type)	Z: Terminal cover	
			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

Model		EKM8T-125			EKM8T-160			
Rated frame current Inm (A)		125			160			
Rated operational current In (A)		20,25,32,40,50,63,80,100,125A			25,32,40,50,63,75,80,100,120,125,150,160A			
Rated insulation voltage Ui (V)		1000V			1000V			
Rated impulse withstand voltage Uimp (kV)		8kV			8kV			
Rated operational voltage Ue (V), AC 50/60Hz		400V			400V			
Breaking capacity code		C	S	H	C	S	H	UH
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**	**36**
	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**	**36**
	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			
Electrica llife (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	-	-	-	-

Thermo-Magnetic Double Adjustable Type MCCB

Standard_ IEC60947-2

EKM8T-250				EKM8T-400			EKM8T-630			EKM8T-800	EKM8T-1250
250				400			630			800	1250
125,150,160,200,250A				250,300,320,400A			500,600,630A			630,700,800A	630,700,800,1000,1250A
1000V				1000V			1000V			1000V	1000V
8kV				8kV			8kV			8kV	8kV
400V				400V			400V			400V	400V
C	S	H	UH	S	H	UH	S	H	UH	H	H
3P,4P				3P,4P			3P,4P			3P,4P	3P,4P
20	28	35	-	-	50	-	-	50	-	60	60
10	**18**	**25**	**36**	**25**	**35**	**50**	**25**	**35**	**50**	**50**	**50**
4	4	8	-	-	10	-	-	10	-	15	15
30	40	50	-	-	75	-	-	75	-	85	85
15	**25**	**35**	**36**	**35**	**50**	**50**	**35**	**50**	**50**	**65**	**65**
6	8	8	-	-	10	-	-	10	-	15	15
IEC 60947-2				IEC 60947-2			IEC 60947-2			IEC 60947-2	IEC 60947-2
A				A			A			A	A
■				■			■			■	■
Thermo magnetic				Thermo magnetic			Thermo magnetic			Thermo magnetic	Thermo magnetic
7000				4000			4000			2500	2500
1000				1000			1000			500	500

3P	4P	3P	4P	3P	4P	3P	4P	3P	4P
■	■	■	■	■	■	■	■	■	■
■	■	■	■	■	■	■	■	■	■
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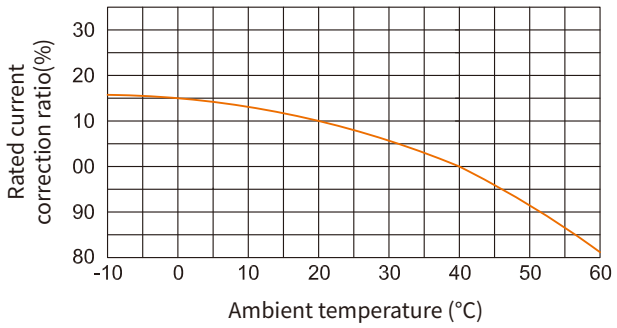
Current-Temperature Characteristics



Derating of Temperature

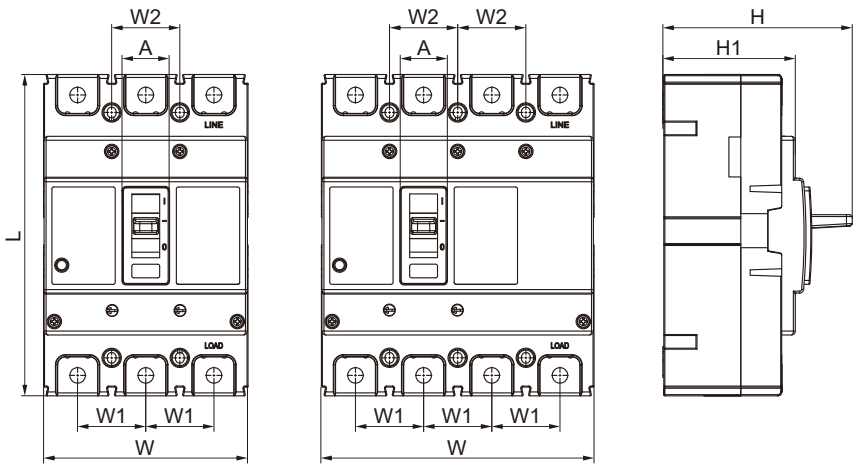
Model	Ambient temperature (40°C product)														
	-10°C	-5°C	0°C	5°C	10°C	15°C	20°C	25°C	30°C	35°C	40°C	45°C	50°C	55°C	60°C
EKM8T-160	1.22	1.2	1.15	1.14	1.12	1.09	1.07	1.05	1.03	1.01	1	0.977	0.957	0.936	0.915
EKM8T-250	1.2	1.18	1.15	1.13	1.11	1.09	1.08	1.07	1.05	1.02	1	0.985	0.968	0.952	0.935
EKM8T-400	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

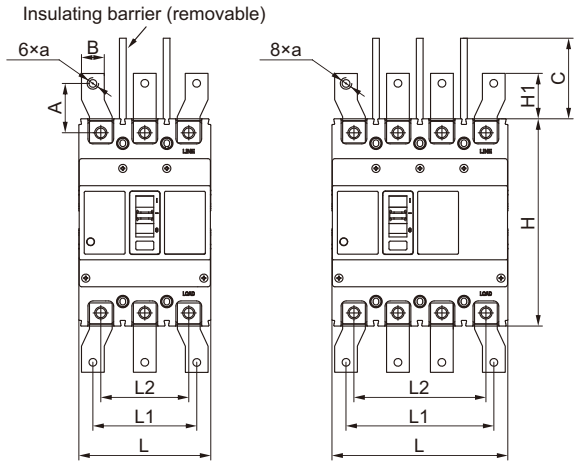
Altitude (m)	2000	2500	3000	4000	4500	5000
Power frequency withstand voltage (V)	2500	2500	2250	1950	1775	1625
Insulation voltage (V)	1000	1000	900	780	710	650
Maximum operationnal voltage (V)	400	400	350	312	284	260
Correction coefficient of operating current (In)	1	1	0.98	0.95	0.92	0.9

Overall Dimension (mm)



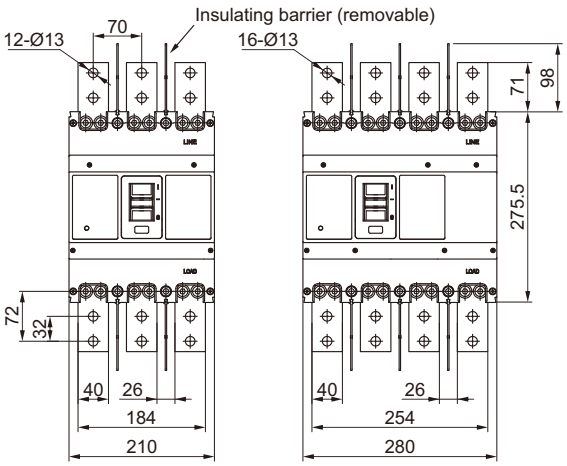
Model	Poles	W	L	H	H1	W1	W2	A
EKM8T-125	3	75	130	94.5	68	25	25	24
	4	100	130	94.5	68	25	25	24
EKM8T-160	3	90	155	94(S)/108(H)	68(S)/82(H)	30	30	25
	4	120	155	94(S)/108(H)	68(S)/82(H)	30	30	25
EKM8T-250	3	105	165	96(S)/116(H)	68(S)/88(H)	35	35	24.4
	4	140	165	96(S)/116(H)	68(S)/88(H)	35	35	24.4
EKM8T-400/630	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

Front Connection Installation Dimension (mm)

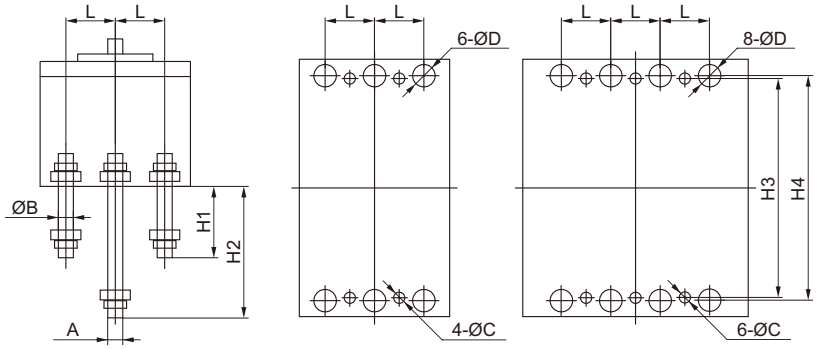


Model	Poles	L	L1	L2	H	H1	A	B	C	a
EKM8T-125	3	75	68	50	130	24	24.5	15	48	M8
	4	100	93	75	130	24	24.5	15	48	M8
EKM8T-160	3	90	78	60	155	21.8	24.5	15	48(S)/64(H)	M8
	4	120	108	90	155	21.8	24.5	15	48(S)/64(H)	M8
EKM8T-250	3	105	84	70	165	41.8	43.5	20	48(S)/64(H)	M8
	4	140	119	105	165	41.8	43.5	20	48(S)/64(H)	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

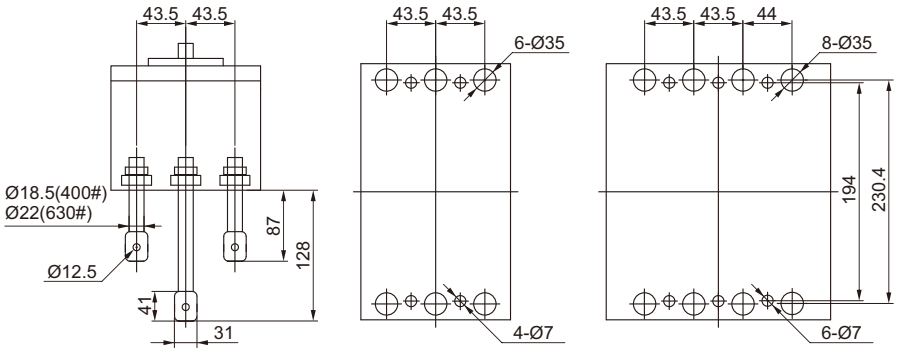


Rear Connection Installation Dimension (mm)

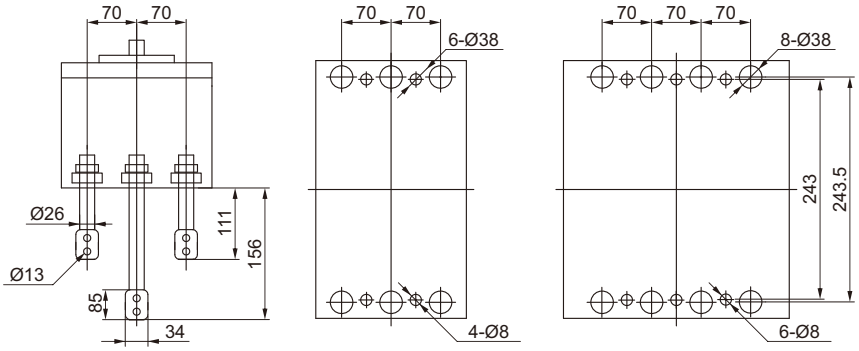


Model	L	H1	H2	H3	H4	A	B	C	D
EKM8T-125	25	51	81	110	114	8	10	4.5	13
EKM8T-160	30	49	94	132	134	8	12	4.5	15
EKM8T-250	35	82	121	126	144	12	12	4.5	15

EKM8T-400/630

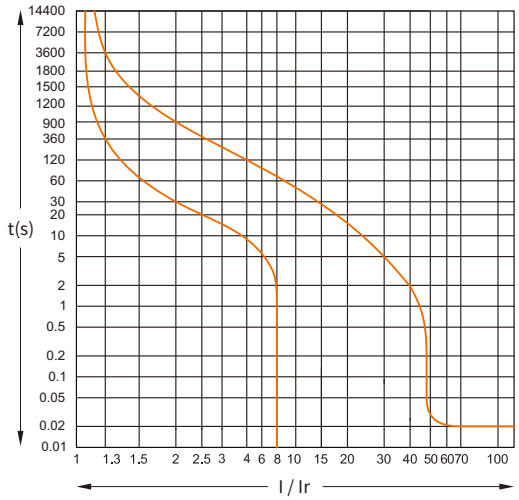


EKM8T-800

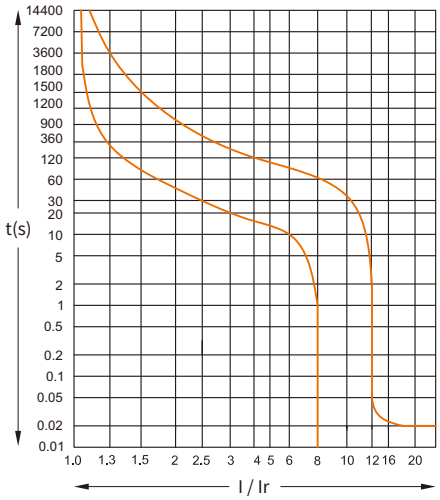


Tripping Characteristic Curve

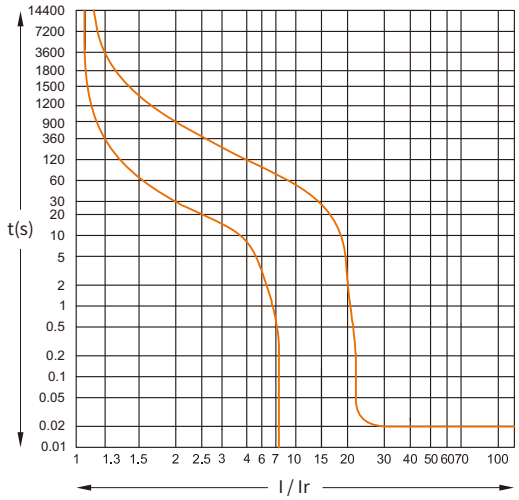
EKM8T-125 (10-50A)



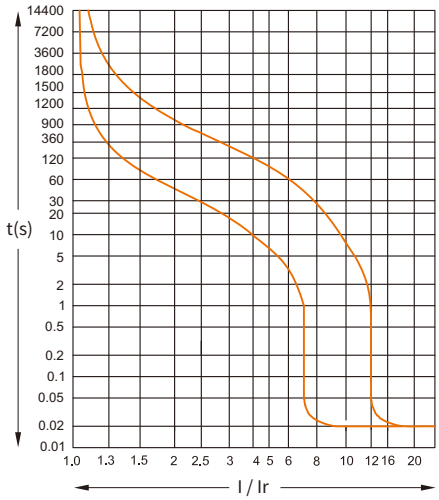
EKM8T-125 (63-125A)



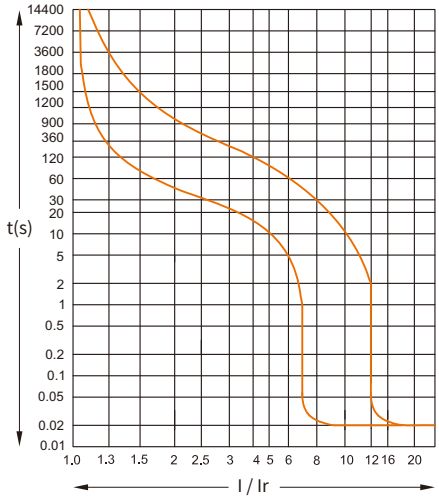
EKM8T-160 (25-63A)



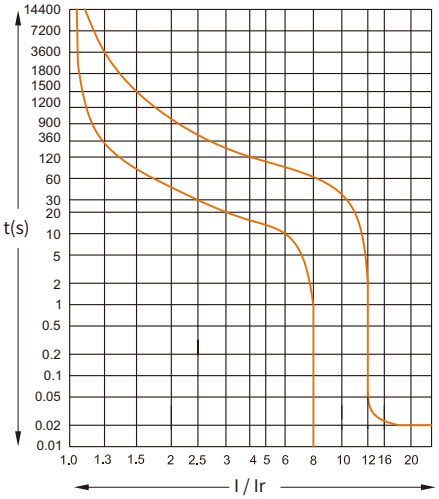
EKM8T-160 (80-160A)



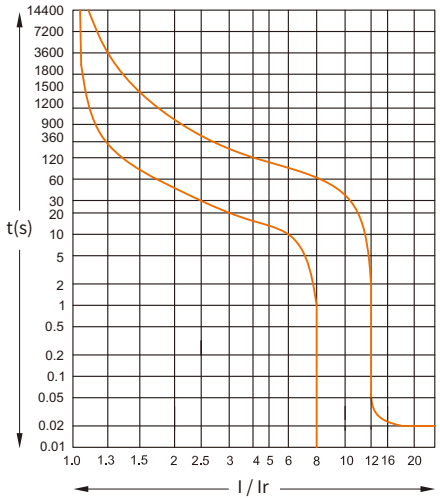
EKM8T-250



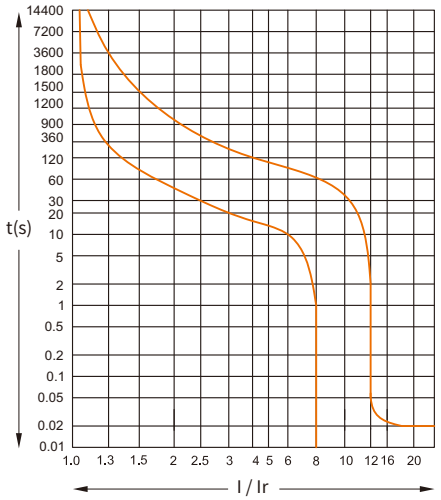
EKM8T-400



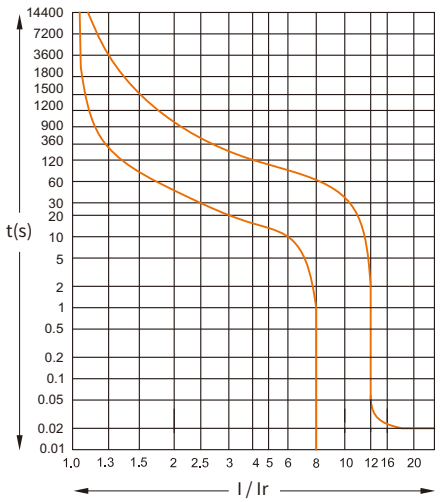
EKM8T-630



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

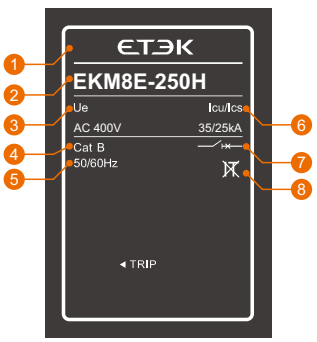
EKM8E series offers a range of MCCBs with electronic type trip unit, providing LSI* protection. These MCCB are suitable for use with AC 50Hz, rated voltage of 690V and below, and rated current up to 2000A.

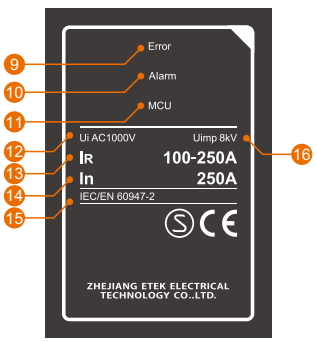
Electronic trip units in comparison with thermomagnetic trip units, they allow a more precise setting both in terms of trip times as well as in terms of current thresholds to meet the installation requirements better.

- Frame size: 160A, 250A, 400A, 630A, 800A, 1250A, 1600A, 2000A
- Rated operational voltage Ue (V/AC): 230/400/415/690
- Breaking capacity code: S, H, UH
- 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. Ue: Rated operational voltage
4. CatA: Utilization category of breaker
5. Frequency of A.C.
6. Icu/Ics: 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. Ui: 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

Rated current(A)	32	63	75	100	120	150	160	250	315	320	400	500	600	630	800	1000	1200	1250	1500	1600	2000
Frame size(A) 160	■	■	■	■	■	■	■														
Frame size(A) 250								■													
Frame size(A) 400									■	■	■										
Frame size(A) 630												■	■	■							
Frame size(A) 800														■	■						
Frame size(A) 1250																■	■	■			
Frame size(A) 1600															■	■	■	■	■	■	
Frame size(A) 2000																■	■	■	■	■	■

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	■	■	■	■	■	■	■	■	■	■	■	■	■	■
	UH					■	■	■	■	■	■	■	■		

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
EKM8E -	160	H	P1	/ 4	3	00
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	H: High breaking type	ZY1：Turning handle (hand-operated center type-round handle)-(Preferred for conventional factory)			
	800: 800A		ZF1：Turning handle (hand-operated center type-square handle)	4: 4P	6: 6 knob	
	1250: 1250A		ZY2：Turning handle (hand-operated eccentric type-round handle)			
	1600: 1600A	UH: Extra-high breaking type	ZF2：Turning handle (hand-operated eccentric type-square handle)			
	2000: 2000A		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)
	B: There is no over-current protection at pole N and N-pole operates with other three poles.	III: Overload alarm does not trip		Z1: Rear connection (fixed type)		400: 400A (0.4-1In adjustable)
		R: Thermomagnetic protection		Z2Q: Plug-in front connection (split type)		630: 500,630A (0.4-1In adjustable)
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 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)
	D: There is over-current protection at pole N and the N pole is always connected.	VII: Low temperature rise model 60K		Z3H: Plug-in rear connection (one-piece)		1600: 800,1000, 1250,1600A (0.4-1In adjustable)
				DF: Draw-out type front connection		2000: 1000,1250, 1600,2000A (0.4-1In adjustable)
				DR: Draw-out type rear connection		

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

Model		EKM8E-160		EKM8E-250		EKM8E-400	
Rated frame current Inm (A)		160		250		400	
Rated operational current In (A)		32,63,75,100,120,150,160A		250A		315, 320, 400A	
Tripper 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)		8kV		8kV		8kV	
Rated operational voltage Ue (V), AC 50/60Hz		AC400V, AC690V		AC400V, AC690V		AC400V, AC690V	
Breaking capacity code		S	H	S	H	H	UH
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**	**50**
	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**	**50**
	690V	8	8	8	8	10	-
Standards		IEC 60947-2		IEC 60947-2		IEC 60947-2	
Utilization category		A		A		A	
Isolation function		■		■		■	
Trip unit type		Electronic		Electronic		Electronic	
Mechanical life (times)		8500		8500		4000	
Electrica llife (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	-	-	-	-	■	-

	EKM8E-630		EKM8E-800		EKM8E-1250		EKM8E-1600	EKM8E-2000
	630		800		1250		1600	2000
	500, 600, 630A		630, 800A		1000, 1200, 1250A		800, 1000, 1250, 1600A	1000, 1250, 1600, 2000A
	250, 280, 315, 350, 380, 440, 500, 570, 630		320, 400, 450, 500, 550, 630, 700, 750, 800		500, 600, 700, 800, 900, 1000, 1100, 1200, 1250		630, 800, 900, 1000, 1100, 1250, 1400, 1500, 1600	800, 1000, 1250, 1400, 1500, 1600, 1800, 1900, 2000
	1000V		1000V		1000V		1000V	1000V
	8kV		8kV		8kV		8kV	8kV
	AC400V, AC690V		AC400V, AC690V		AC400V, AC690V		AC400V, AC690V	AC400V, AC690V
	H	UH	H	UH	H	UH	H	H
	3P,4P		3P,4P		3P,4P		3P,4P	3P,4P
	50	-	60	-	60	-	85	85
	35	**50**	**50**	**65**	**50**	**65**	**50**	**50**
	10	-	10	20	10	20	25	25
	75	-	85	-	85	-	100	100
	50	**50**	**65**	**65**	**65**	**65**	**85**	**85**
	10	-	20	20	20	20	25	25
	IEC 60947-2		IEC 60947-2		IEC 60947-2		IEC 60947-2	IEC 60947-2
	A		B		B		B	B
	■		■		■		■	■
	Electronic		Electronic		Electronic		Electronic	Electronic
	4000		2500		2500		2500	2500
	1000		500		500		500	500

	3P	4P	3P	4P	3P	4P	3P	4P	3P	4P
	■	■	■	■	■	■	■	■	■	■
	■	■	■	■	■	■	■	■	■	■
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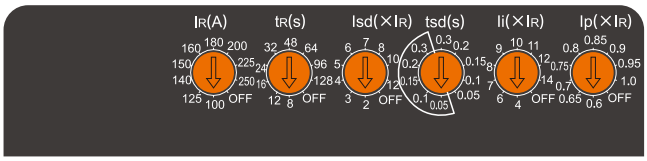
	■	-	■	-	-	-	-	-	-	-

Electronic trip unit

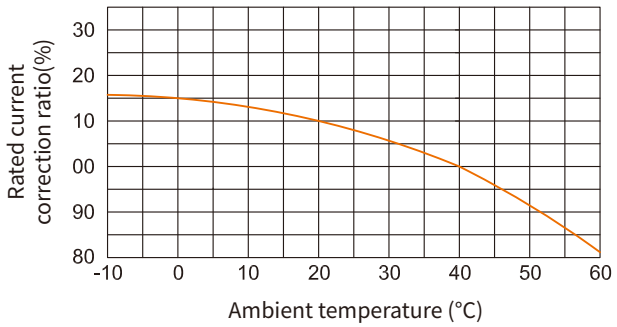


EKM8E-250

IR: Overload long delay setting current
Isd: Short-circuit short delay setting current
Ii: Short-circuit instantaneous setting current
tR: Overload long delay setting time
tsd : Short-circuit short delay setting time
Ip: Overload pre-alarm setting current

Model	Setting current and time parameters						
	In(A)	IR(A)	TR(s)	Isd(×IR)	Tsd(s)	Ii(×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	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					
	800	320,400,450,500,550,630,700,750,800,OFF					
		500,550,600,630,660,700,740,780,800,OFF					
	1000	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	8,12,16,24, 32,48,64, 96,128,256				
	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

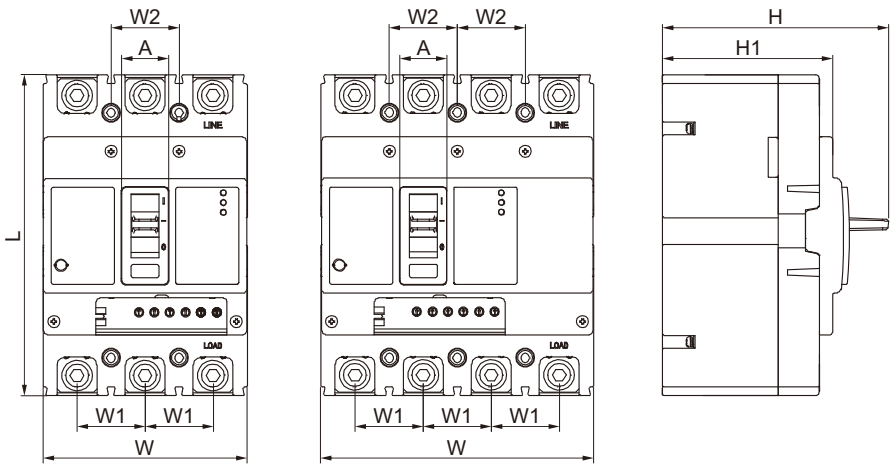
Model	Ambient temperature (40°C product)														
	-10°C	-5°C	0°C	5°C	10°C	15°C	20°C	25°C	30°C	35°C	40°C	45°C	50°C	55°C	60°C
EKM8E-160	1.22	1.2	1.15	1.14	1.12	1.09	1.07	1.05	1.03	1.01	1	0.977	0.957	0.936	0.915
EKM8E-250	1.2	1.18	1.15	1.13	1.11	1.09	1.08	1.07	1.05	1.02	1	0.985	0.968	0.952	0.935
EKM8E-400	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

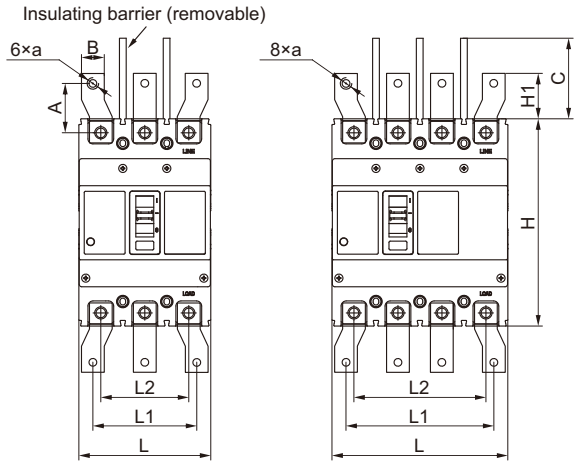
Altitude (m)	2000	2500	3000	4000	4500	5000
Power frequency withstand voltage (V)	2500	2500	2250	1950	1775	1625
Insulation voltage (V)	1000	1000	900	780	710	650
Maximum operationnal voltage (V)	400	400	350	312	284	260
Correction coefficient of operating current (In)	1	1	0.98	0.95	0.92	0.9

Overall Dimension (mm)



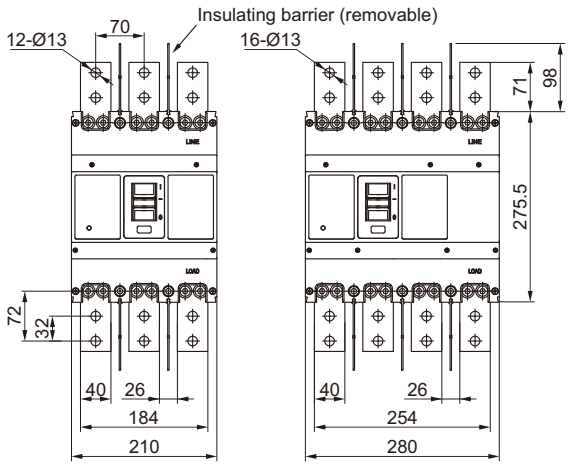
Model	Poles	W	L	H	H1	W1	W2	A
EKM8E-160	3	90	155	94(S)/108(H)	68(S)/82(H)	30	30	25
	4	120	155	94(S)/108(H)	68(S)/82(H)	30	30	25
EKM8E-250	3	105	165	96(S)/116(H)	68(S)/88(H)	35	35	24
	4	140	165	96(S)/116(H)	68(S)/88(H)	35	35	24
EKM8E-400/630	3	140	257	152	103	44	44	51
	4	184	257	152	103	44	44	51
EKM8E-800	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)

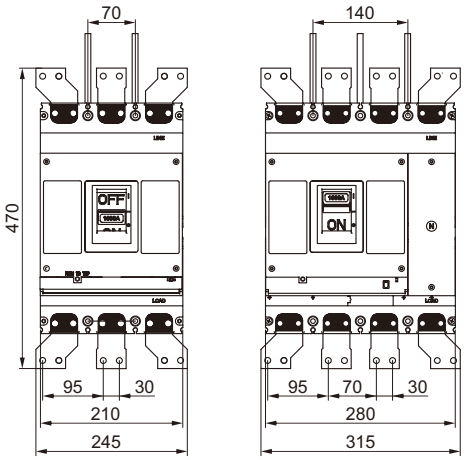


Model	Poles	L	L1	L2	H	H1	A	B	C	a
EKM8T-160	3	90	78	60	155	21.8	24.5	15	48(S)/64(H)	M8
	4	120	108	90	155	21.8	24.5	15	48(S)/64(H)	M8
EKM8E-250	3	105	84	70	165	41.8	43.5	20	48(S)/64(H)	M8
	4	140	119	105	165	41.8	43.5	20	48(S)/64(H)	M8
EKM8E-400/630	3	140	111	87	257	45.4	43	28	98	Ø14
	4	184	155	131	257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

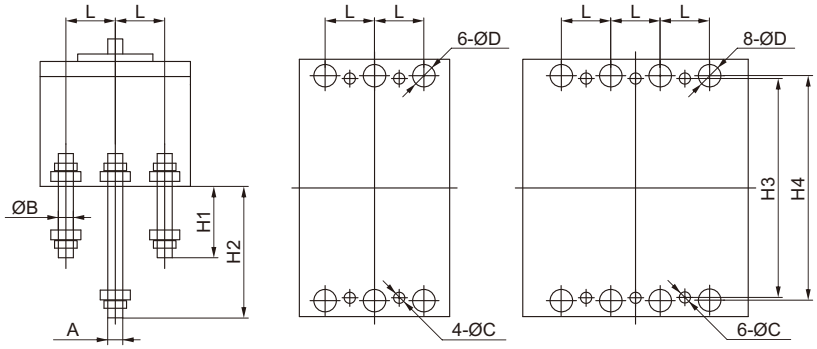
EKM8E-1250



EKM8E-1600/2000

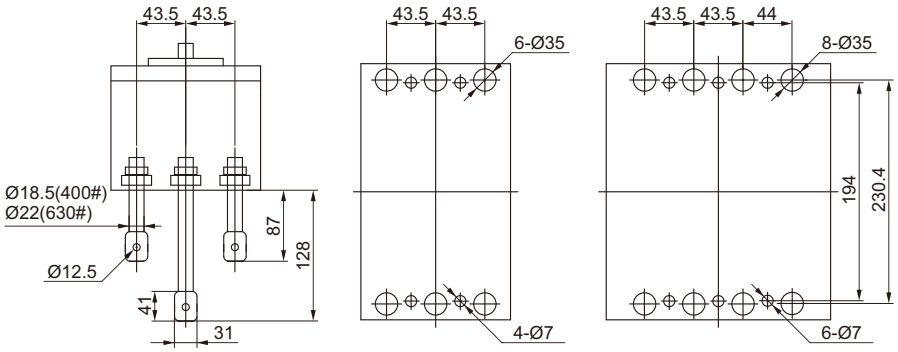


Rear Connection Installation Dimension (mm)

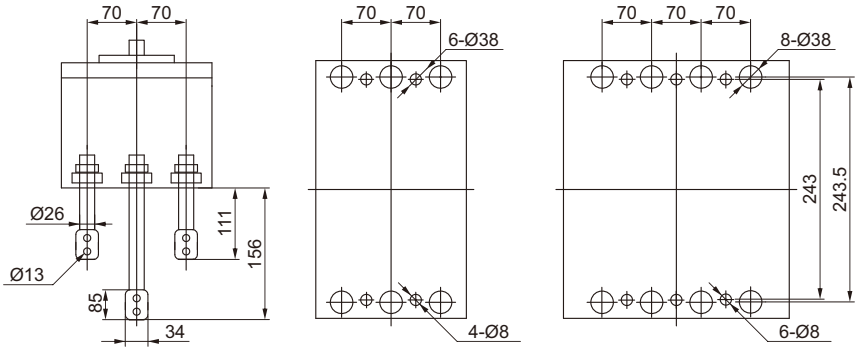


Model	L	H1	H2	H3	H4	A	B	C	D
EKM8E-160	30	49	94	132	134	M8	12	4.5	15
EKM8E-250	35	82	121	126	144	M12	12	4.5	15

EKM8E-400/630

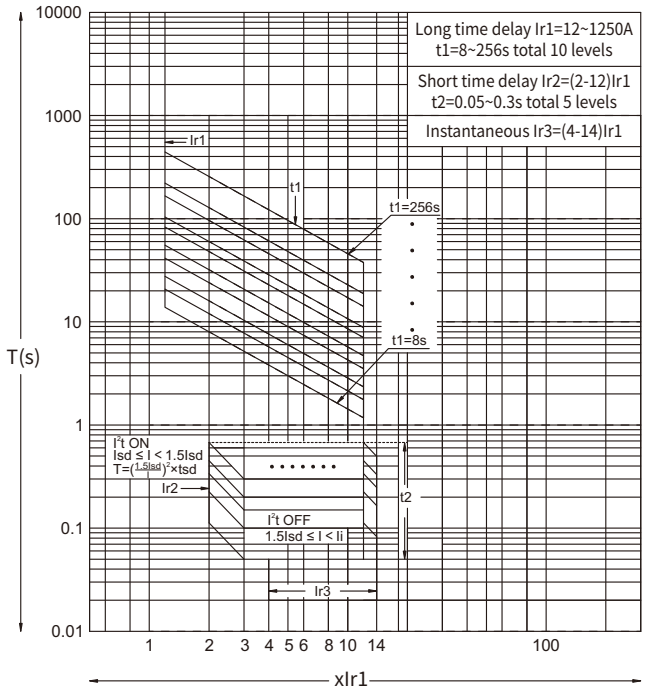


EKM8E-800

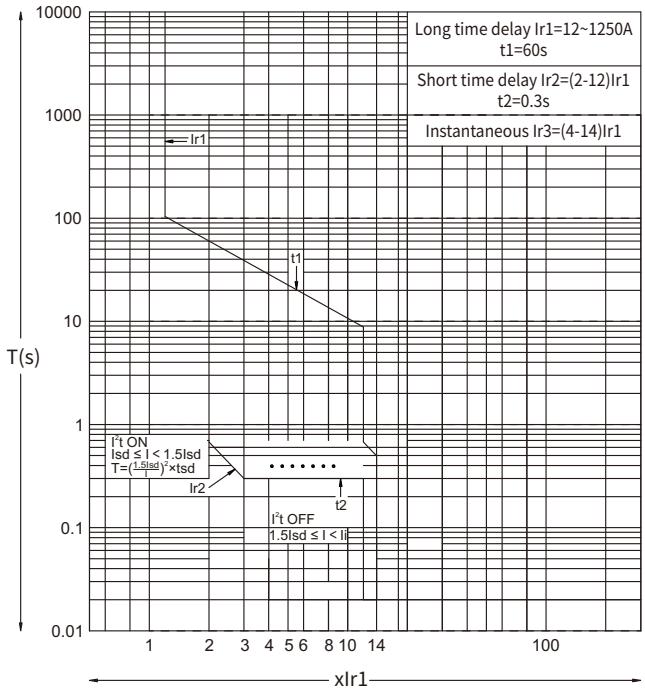


Tripping Curve

EKM8E (6 knobs)



EKM8E (3 knobs)



EKM8EY MCCB 250AF~1250AF

Electronic Adjustable Type MCCB with LCD

Standard_ IEC60947-2

EKM8EY-250H 3P

EKM8EY-400H 3P

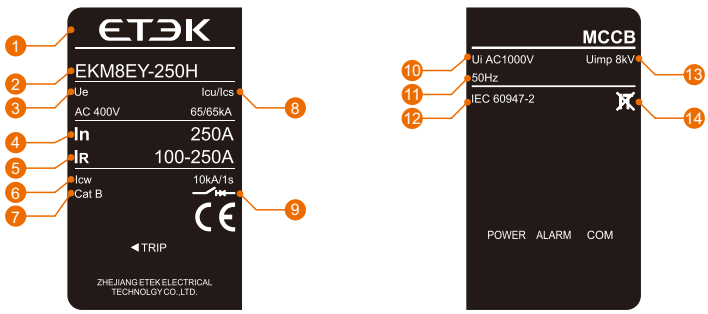
EKM8EY-800H 3P

Product Overview

EKM8EY series offers a range of molded case circuit breakers with an electronic trip unit, featuring an LCD display that provides easier access to crucial information about the MCCB. These MCCBs are suitable for use with AC 50Hz, rated voltage of 690V and below, and rated current up to 1250A.

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

Nameplate Interpretation



1. Company LOGO
2. Product model
3. Ue: Rated operational voltage
4. In: Rated operational current
5. IR: Long-time-delay setting current range
6. Icw: Rated short time with stand current
7. Cat B: Utilization category of breaker
8. Icu/Ics: Ultimate short circuit breaking capacity/Service short circuit breaking capacity
9. Electrical symbol for circuit breaker with isolating function
10. Ui: Rated insulation voltage
11. Frequency of A.C.
12. The product is in conformity with standard IEC/EN 60947.2
13. Uimp: Rated impulsive withstand voltage
14. Not applicable to IT systems

Comparison Table of Frame Sizes and Rated Current

Rated current(A)		100	125	160	180	200	225	250	315	350	400	500	630	700	800	1000	1250
Frame size(A)	250	●	●	●	●	●	●	●									
	400					●	●	●	●	●	●						
	630										●	●	●				
	800										●	●	●	●	●		
	1250												●	●	●	●	●

Product Features

Classification	Description		
Display method	LCD display + LED indicator light		●
Interface operation	Button		●
Protective function	Current protection	Overload long delay protection	●
		Short circuit short delay protection	●
		Short circuit instantaneous protection	●
		Overload warning function	●
	voltage protection	Under and over voltage protection function	●
		Phase loss protection function	●
	Communication function	DL/T 645-2007 Multifunctional electricity meter communication protocol	●
		Modbus-RTU communication protocol	○
		Communication hardware 1 channel RS-485	●
	External DI/O port function	Communication auxiliary power input	○
		One DI/O programmable control input	○
	Broken record	10 trip fault storage (the host computer must read the feedback information uploaded each time before it can query more records)	●
		30-day maximum/minimum voltage and current records	●
		80 protection function withdrawal event records	●
		10 gate position change event records	●
		10 alarm event records	●
		10 high voltage power loss and recovery records	●
	Time function	With year, month, day, hour, minute and second real-time clock function	●

Note: The symbol "●" indicates that the function is available; the symbol "○" indicates that the function is optional.

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
EKM8EY-	**250**	**H**	**P1**	**/ 4**	**3**	**00**
EKM8EY Series electronic adjustable type LCD MCCB	250: 250A 400: 400A 630: 630A 800: 800A 1250: 1250A	H: High breaking type	No code: Direct operation P1：DC3 electric operation P2: DC6 series electric operation ZY1：Turning handle (hand-operated center type-round handle)-(Preferred for conventional factory) ZF1：Turning handle (hand-operated center type-square handle) ZY2：Turning handle (hand-operated eccentric type-round handle) ZF2：Turning handle (hand-operated eccentric type-square handle) Z3:Turning handle (Hand-operated one-piece type) (Only available for 250)	3: 3P 4: 4P	3: Electronic 4: Thermal + Electromagnetic release	See accessory table

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**	**JL**	**/**	**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	250: 125,250A (0.4-1In adjustable)
		JL: Metering function		P: Coupling row (extended copper row)		
	B: There is no over-current protection at pole N and N-pole operates with other three poles.	WD: Temperature display function		Z1: Rear connection (fixed type)		400: 400A (0.4-1In adjustable)
		JLY: Metering, Bluetooth function		Z2Q: Plug-in front connection (split type)		630: 630A (0.4-1In adjustable)
		ZB: Built-in extended wideband carrier		Z2H: Plug-in rear connection (split type)		
2: motor protection	C: There is over-current protection at pole N and N-pole operates with other three poles.	Z: External extended carrier		Z3Q: Plug-in front connection (one-piece)	Z: Terminal cover	800: 630,800A (0.4-1In adjustable)
		LC: Measurement function		Z3H: Plug-in rear connection (one-piece)		
	D: There is over-current protection at pole N and the N pole is always connected.	G: Grounding protection function		DF: Draw-out type front connection		1250: 1000,1250A (0.4-1In adjustable)
		J1: Accuracy 1% (5 ports)		DR: Draw-out type rear connection		

③ Magnetic protection 14In does not operate, 20In action; 700A-1250A without motor protection type.
④ 250 no pull-out; 1250 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.

EKM8EY MCCB 250AF~1250AF

Electronic Adjustable Type MCCB with LCD

Standard_ IEC60947-2

Technical Parameters

Model	EKM8EY-250	EKM8EY-400	EKM8EY-630	EKM8EY-800	EKM8EY-1250
Rated frame current Inm (A)	250	400	630	800	1250
Rated operational current In (A)	125A(0.4~1.0In) 250A(0.4~1.0In)	400A(0.4~1.0In)	630A(0.4~1.0In)	630A(0.4~1.0In) 800A(0.4~1.0In)	1000A(0.4~1.0In) 1250A(0.4~1.0In)
Rated insulation voltage Ui (V)	1000V				
Rated impulse withstand voltage Uimp (kV)	8kV				
Rated operational voltage Ue (V), AC 50/60Hz	AC400V				
Breaking capacity code	H				
Number of poles	3P,4P				
Rated service short circuit breaking capacity Ics (kA)	65	70	70	65	65
Rated ultimate short circuit breaking capacity Icu (kA)	65	70	70	85	80
Rated short-time withstand current Icw (kA)	/	10kA/1S	10kA/1S	20kA/1S	20kA/1S
Standards	IEC 60947-2				
Utilization category	B				
Isolation function	■				
Trip unit type	Electronic				
Mechanical life (times)	7000	4000	4000	2500	2500
Electrica llife (times)	1000	1000	1000	500	500
Communications protocol	DL/T 645; Modbus-RTU(requires user customization)				
Communications rate	600bps, 1200bps, 2400bps, 4800bps, 9600bps, 19200bps				

Poles		3P	4P	3P	4P	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	-	-	■	-	■	-	■	-	-	-

Protection Characteristics

Overload long time delay setting current IR

Setting range								Action time
Current I		Action time t						
×IR	1.05IR	Overload long delay setting time	I≤1.05IR, no action within 2h					±5%
	1.30IR		I≥1.3IR, action within 1h if less than					
	2.0IR		27s	45s	90s	108	162s	
	6.0IR		3s	5s	10	12s	18s	

Short circuit short delay setting current Isd

Short circuit short delay setting time Tsd	t=Tsd (Tsd=0.1~1.0s)
Short delay current setting value	Isd=(2~10)×IR; adjustment step size 1.0IR
Short delay protection feature	I<0.9Isd, no action; I≥1.1Isd, action
Short delay protection time accuracy	±10%

Short circuit instantaneous tripping setting current Ii

Instantaneous protection setting value	Ii=(2~12)×IR; adjustment step size 1.0IR
Instantaneous protection characteristics	I<0.85Isd, no action; I≥1.15Isd, action
Instantaneous protection controller inherent action time	<100ms

Overload warning

Overload warning	The default overload pre-alarm is 1.0IR, and the alarm forms include LED indicator alarm, display interface indication alarm, and host computer communication data alarm.
	Overload pre-alarm characteristics: I≥1.13IR starts alarm; I<1.05IR stops alarm.

Undervoltage protection action value Uvu

Parameter setting instructions	Setting range	Set step size	Action characteristics
Under voltage threshold Uvu	154V~187V	1V	≤1.0Uvu, delayed action
Action delay	1~10s	2s	fixed time limit
Return threshold Uvur	Uvur=Uvu+10V	-	≥1.0Uvur, return
Return delay	1s	-	fixed time limit
Operating mode	Trip without alarm + Alarm without trip + No trip without alarm		
Protection error	±2% (voltage value)		

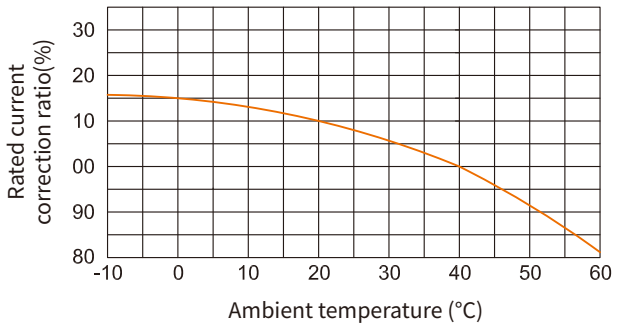
Overvoltage protection action value Uvo

Parameter setting instructions	Setting range	Set step size	Action characteristics
Overvoltage threshold Uvo	253V~286V	1V	≤1.0Uvo, delayed action
Action delay	1~10s	3s	fixed time limit
Return threshold Uvur	Uvur=Uvu-10V	-	≥1.0Uvur, return
Return delay	1s	-	fixed time limit
Operating mode	Trip without alarm + Alarm without trip + No trip without alarm		
Protection error	±2% (voltage value)		

Phase loss protection

Phase loss protection	When any phase A, B, or C is missing on the switching power supply side of the circuit breaker, the switch protection trips and the action time is ≤1s.

Current-Temperature Characteristics



Derating of Temperature

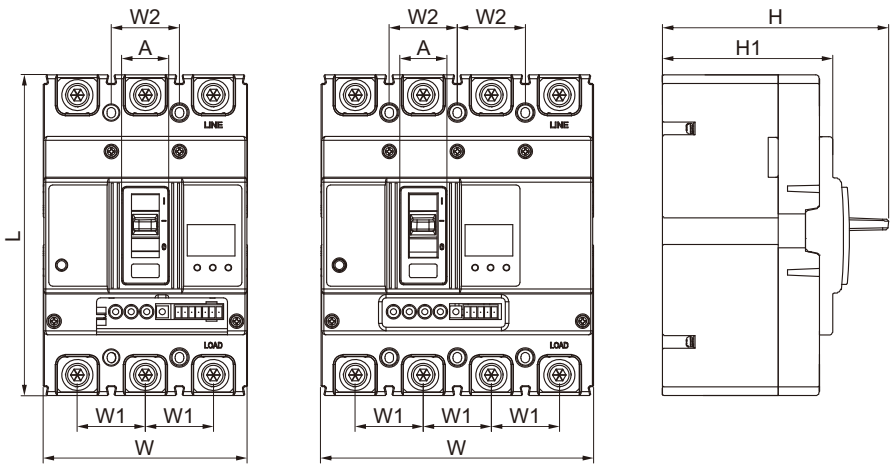
Model	Ambient temperature (40°C product)													
	-5°C	0°C	5°C	10°C	15°C	20°C	25°C	30°C	35°C	40°C	45°C	50°C	55°C	60°C
EKM8EY-250	1.18	1.15	1.13	1.11	1.09	1.08	1.07	1.05	1.02	1	0.985	0.968	0.952	0.935
EKM8EY-400	1.35	1.3	1.22	1.18	1.13	1.09	1.06	1.04	1.02	1	0.985	0.968	0.952	0.935
EKM8EY-630	1.18	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
EKM8EY-800	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
EKM8EY-1250	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

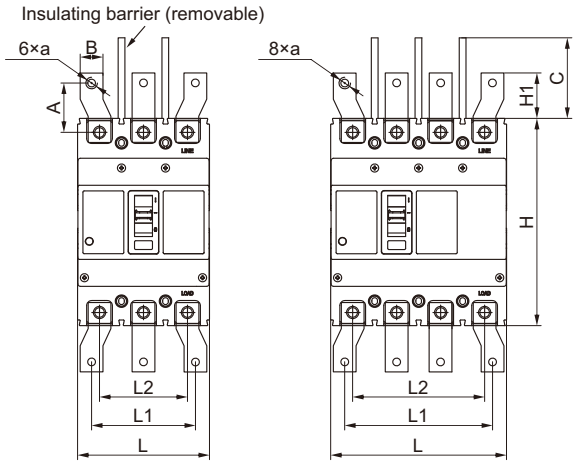
Overall Dimension (mm)



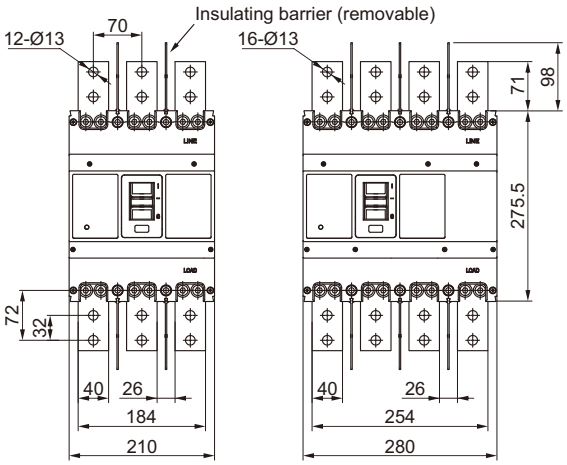
Model	Poles	W	L	H	H1	W1	W2	A
EKM8EY-250	3	105	165	116	88	35	35	24
	4	140	165	116	88	35	35	24
EKM8EY-400/630	3	140	257	152	103	44	44	51
	4	184	257	152	103	44	44	51
EKM8EY-800	3	210	275.5	152	103	70	70	58
	4	280	275.5	152	103	70	70	58
EKM8EY-1250	3	210	275.5	152	103	70	70	58
	4	280	275.5	152	103	70	70	58

Front Connection Installation Dimension (mm)

EKM8EY-250~800



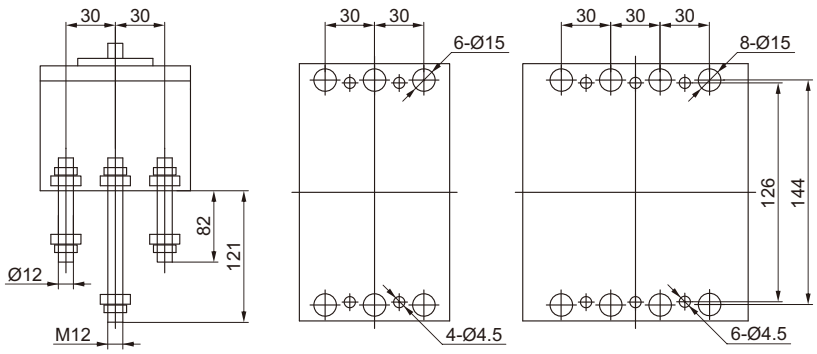
EKM8EY-1250



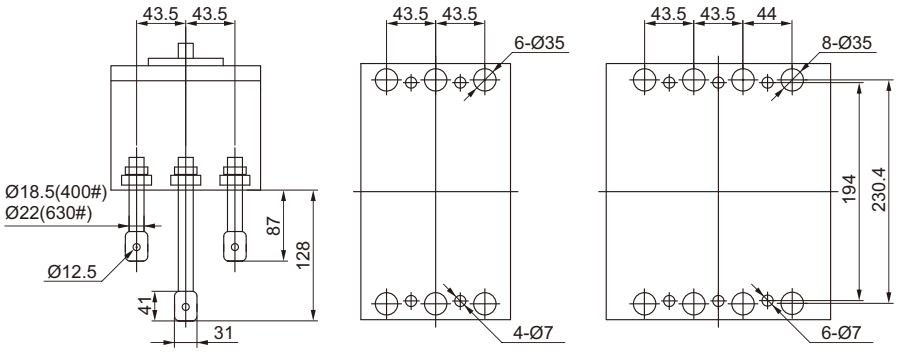
Model	Poles	L	L1	L2	H	H1	A	B	C	a
EKM8EY-250	3	105	84	70	165	41.8	43.5	20	64	M8
	4	140	119	105	165	41.8	43.5	20	64	M8
EKM8EY-400/630	3	140	111	87	257	45.4	43	28	98	Ø14
	4	184	155	131	257	45.4	43	28	98	Ø14
EKM8EY-800	3	210	160	140	275.5	50.5	53	40	98	Ø13
	4	280	230	210	275.5	50.5	53	40	98	Ø13

Rear Connection Installation Dimension (mm)

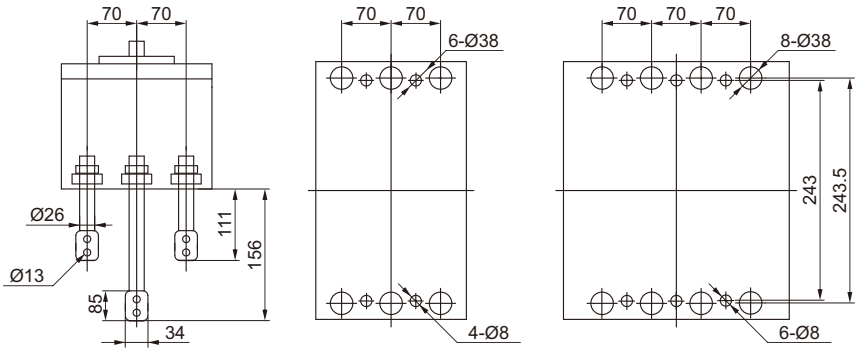
EKM8EY-250



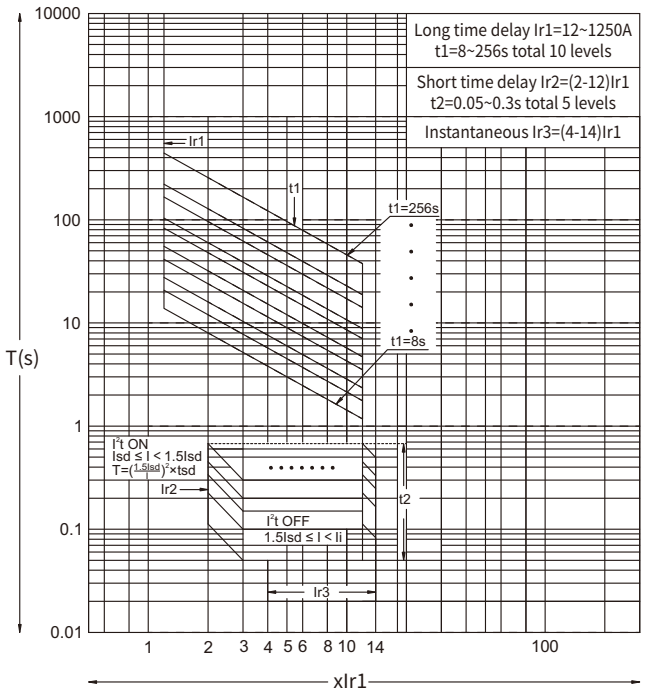
EKM8EY-400/630



EKM8EY-800



Tripping Curve



EKM8ELY MCCB 160AF~800AF

Electronic Type Earth-Leakage MCCB with LCD

Standard_ IEC60947-2

EKM8ELY-250H

EKM8ELY-400H

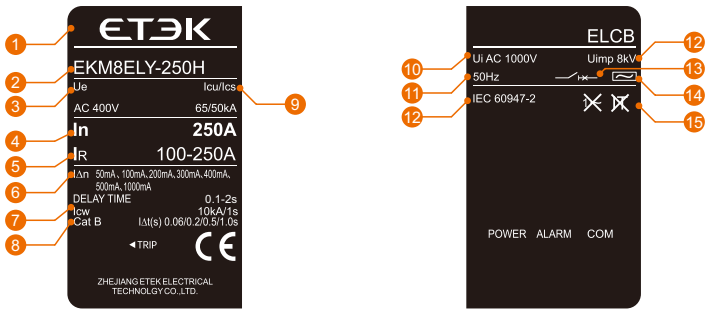
EKM8ELY-800H

Product Overview

EKM8ELY series offers a range of earth leakage MCCBs with an electronic trip unit, featuring an LCD display that provides AC type protection against residual current. These MCCBs are suitable for use with AC 50Hz, rated voltage of 690V and below, and rated current up to 800A.

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

Nameplate Interpretation



1. Company LOGO
2. Product model
3. Ue: Rated operational voltage
4. In: Rated operational current
5. IR: Long-time-delay setting current range
6. I△n: Rated residual operating current
7. Icw: Rated short time with stand current
8. Cat B: Utilization category of breaker
8. Icu/Ics: Ultimate short circuit breaking capacity/Service short circuit breaking capacity
9. Ui: Rated insulation voltage
10. Frequency of A.C.
11. The product is in conformity with standard IEC/EN 60947.2
12. Uimp: Rated impulsive withstand voltage
13. Electrical symbol for circuit breaker with isolating function
14. Residual current IΔn type
15. Not applicable to IT systems

Comparison Table of Frame Sizes and Rated Current

Rated current(A)		40	50	63	80	100	125	160	180	200	225	250	315	350	400	500	630	700	800
Frame size(A)	160	■	■	■	■	■	■	■											
	250		■	■	■	■	■	■	■	■	■	■							
	400											■	■	■	■				
	630														■	■	■		
	800															■	■	■	■

Product Features

Classification	Description		
Display method	LCD display + LED indicator light		●
Interface operation	Button		●
Protective function	Current protection	Overload long delay protection	●
		Short circuit short delay protection	●
		Short circuit instantaneous protection	●
		Overload warning function	●
	voltage protection	Under and over voltage protection function	●
		Phase loss protection function	●
		Power side zero-break protection function	-
		Power side voltage loss trip function	●
	Residual current protection	Residual current protection function	●
	Communication function	DL/T 645-2007 Multifunctional electricity meter communication protocol	○
		Modbus-RTU communication protocol	○
		Communication hardware 1 channel RS-485	●
	External DI/O port function	Communication auxiliary power input	○
		One DI/O programmable control input	○
		One passive contact hard remote control	●
	Broken record	10 trip fault storage (the host computer must read the feedback information uploaded each time before it can query more records)	●
		30-day maximum/minimum voltage and current records	●
		80 protection function withdrawal event records	●
		10 gate position change event records	●
		10 alarm event records	●
		10 high voltage power loss and recovery records	●
	Time function	With year, month, day, hour, minute and second real-time clock function	●

Note: The symbol "●" indicates that the function is available; the symbol "○" indicates that the function is optional.

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
EKM8ELY -	**250**	**H**	**P1**	**/**	**4**	**3**	**00**
EKM8ELY series electronic type LCD MCCB with earth-leakage protection	160: 160A 250: 250A 400: 400A 630: 630A 800: 800A	H: High breaking type	No code: Direct operation P1：DC3 electric operation P2: DC6 series electric operation ZY1：Turning handle (hand-operated center type-round handle)-(Preferred for conventional factory) ZF1：Turning handle (hand-operated center type-square handle) ZY2：Turning handle (hand-operated eccentric type-round handle) ZF2：Turning handle (hand-operated eccentric type-square handle) Z3:Turning handle (Hand-operated one-piece type) (Only available for 250)		4: 4P	3: Electronic	See accessory table

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**	**WD**	**/**	**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: 400~100A, 50~125A, 63~160A
				P: Coupling row (extended copper row)		
	B: There is no over-current protection at pole N and N-pole operates with other three poles.			Z1: Rear connection (fixed type)		250: 50~125A, 100~250A
				Z2Q: Plug-in front connection (split type)		
				Z2H: Plug-in rear connection (split type)		400: 160~400A
2: motor protection	C: There is over-current protection at pole N and N-pole operates with other three poles.	WD: Temperature display function		Z3Q: Plug-in front connection (one-piece)	Z: Terminal cover	630: 250~630A
				Z3H: Plug-in rear connection (one-piece)		
	D: There is over-current protection at pole N and the N pole is always connected.			DF: Draw-out type front connection		800: 250~630A, 320~800A
				DR: Draw-out type rear connection		

③ Magnetic protection 14In does not operate, 20In action; 700A-800A without motor protection type.
④ 250 no pull-out.
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.

EKM8ELY MCCB 160AF~800AF

Electronic Type Earth-Leakage MCCB with LCD

Standard_ IEC60947-2

Technical Parameters

Model	EKM8ELY-160	EKM8ELY-250	EKM8ELY-400	EKM8ELY-630	EKM8ELY-800
Rated frame current Inm (A)	160	250	400	630	800
Rated operational current In (A)	100A(40~100A) 125A(50~125A) 160A(63~160A)	125A(50~125A) 250A(100~250A)	400A(160~400A)	630A(252~630A)	630A(252~630A) 800A(320~800A)
Rated insulation voltage Ui (V)	1000V				
Rated impulse withstand voltage Uimp (kV)	8kV				
Rated operational voltage Ue (V), AC 50/60Hz	AC400V				
Breaking capacity code	H				
Number of poles	4P				
Rated service short circuit breaking capacity Ics (kA)	50	50	50	50	65
Rated ultimate short circuit breaking capacity Icu (kA)	65	65	70	70	85
Rated short-time withstand current Icw (kA)	10kA/1S	10kA/1S	10kA/1S	10kA/1S	20kA/1S
Rated residual making and breaking capacity I∆m (kA)	25%Icu				
Standards	IEC 60947-2				
Utilization category	B				
Isolation function	■				
Trip unit type	Electronic				
Residual current tripper type	Electronic				
Rated residual operating current I△n (mA)	50,100,200,300,500,800,1000mA (AC type)				
Break time	0.1~2s (Adjustable)				
Limit not drive time(s)	0.06s,0.08s,0.1s,0.2s,0.3s,0.4s,0.5s,0.6s,0.7s,0.8s,0.9s,1.0s				
Mechanical life (times)	7000	7000	4000	4000	2500
Electrica llife (times)	1000	1000	1000	1000	500
Communications protocol	DL/T 645; Modbus-RTU(requires user customization)				
Communications rate	600bps, 1200bps, 2400bps, 4800bps, 9600bps, 19200bps				

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	-	-	-	-	-

Protection Characteristics

Overload long time delay setting current I_R

Setting range								Action time
Current I		Action time t						
×I_R	1.05I_R	Overload long delay setting time	I≤1.05I_R, no action within 2h					±10%
	1.30I_R		I≥1.3I_R, action within 1h if less than					
	2.0I_R		27s	45s	90s	108	162s	
	6.0I_R		3s	5s	10	12s	18s	

Short circuit short delay setting current Isd

Short circuit short delay setting time Tsd	t=Tsd (Tsd=0.1~1.0s)
Short delay current setting value	Isd=(2~12)×I_R; adjustment step size 1.0I_R
Short delay protection feature	I<0.9Isd, no action; I≥1.1Isd, action
Short delay protection time accuracy	±10%

Short circuit instantaneous tripping setting current Ii

Instantaneous protection setting value	Ii=(4~14)×I_R; adjustment step size 1.0I_R
Instantaneous protection characteristics	I<0.85Isd, no action; I≥1.15Isd, action
Instantaneous protection controller inherent action time	<200ms

Overload warning

Overload warning	The default overload pre-alarm is 1.0I_R, and the alarm forms include LED indicator alarm, display interface indication alarm, and host computer communication data alarm.
	Overload pre-alarm characteristics: I≥1.13I_R starts alarm; I<1.05I_R stops alarm.

Residual current protection

Residual current protection	50mA/100mA/200mA/300mA/500mA/800mA/1000mA adjustable
Breaking time	0.1s-2s adjustable, step size 0.1s continuously adjustable
Protection method	No alarm if tripped, no alarm if no trip, no alarm if no trip

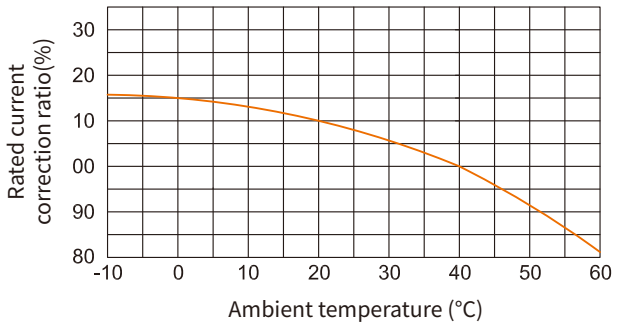
Undervoltage protection action value Uvu

Parameter setting instructions	Setting range	Set step size	Action characteristics
Under voltage threshold Uvu	154V~187V	1V	Delayed action
Action delay	1~30s	1s	Fixed time limit
Return delay	1s	-	Fixed time limit
Operating mode	Trip without alarm + Alarm without trip + No trip without alarm		
Protection error	±1% (voltage value)		

Overvoltage protection action value Uvo			
Parameter setting instructions	Setting range	Set step size	Action characteristics
Overvoltage threshold Uvo	253V~286V	1V	Delayed action
Action delay	1~30s	3s	Fixed time limit
Operating mode	Trip without alarm + Alarm without trip + No trip without alarm		
Protection error	±1% (voltage value)		

Phase loss protection			
Parameter setting instructions	Setting range	Set step size	Action characteristics
Under voltage threshold Uvu	100V~135V	1V	⩽1.0Uvu, delayed action
Action delay	1~30s	1s	Fixed time limit
Return delay	1s	-	Fixed time limit
Operating mode	Trip without alarm + Alarm without trip + No trip without alarm		
Protection error	±1% (voltage value)		

Current-Temperature Characteristics



Derating of Temperature

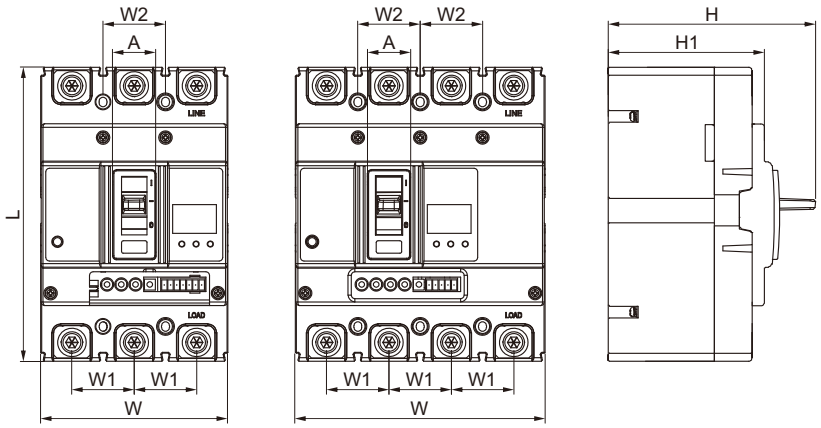
Model	Ambient temperature (40°C product)													
	-5°C	0°C	5°C	10°C	15°C	20°C	25°C	30°C	35°C	40°C	45°C	50°C	55°C	60°C
EKM8ELY-160	1.2	1.15	1.14	1.12	1.09	1.07	1.05	1.03	1.01	1	0.977	0.957	0.936	0.915
EKM8ELY-250	1.18	1.15	1.13	1.11	1.09	1.08	1.07	1.05	1.02	1	0.985	0.968	0.952	0.935
EKM8ELY-400	1.35	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
EKM8ELY-630	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
EKM8ELY-800	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

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

Derating of Altitude

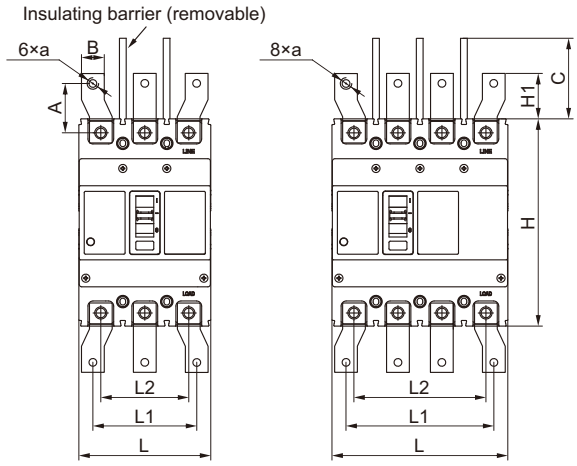
Altitude (m)	2000	2500	3000	4000	4500	5000
Power frequency withstand voltage (V)	2500	2500	2250	1950	1775	1625
Insulation voltage (V)	1000	1000	900	780	710	650
Maximum operationnal voltage (V)	400	400	350	312	284	260
Correction coefficient of operating current (In)	1	1	0.98	0.95	0.92	0.9

Overall Dimension (mm)



Model	Poles	W	L	H	H1	W1	W2	A
EKM8ELY-160	3	90	155	108	82	30	30	25
	4	120	155	108	82	30	30	25
EKM8ELY-250	3	105	165	116	88	35	35	24
	4	140	165	116	88	35	35	24
EKM8ELY-400/630	3	140	257	152	103	44	44	51
	4	184	257	152	103	44	44	51
EKM8ELY-800	3	210	275.5	152	103	70	70	58
	4	280	275.5	152	103	70	70	58

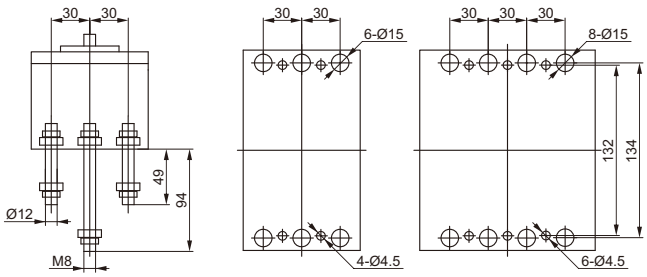
Front Connection Installation Dimension (mm)



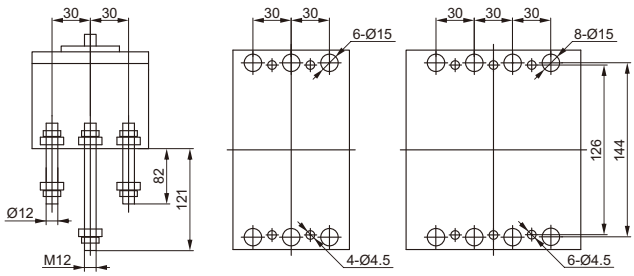
Model	Poles	L	L1	L2	H	H1	A	B	C	a
EKM8ELY-160	3	90	78	60	155	21.8	24.5	15	64	M8
	4	120	108	90	155	21.8	24.5	15	64	M8
EKM8ELY-250	3	105	84	70	165	41.8	43.5	20	64	M8
	4	140	119	105	165	41.8	43.5	20	64	M8
EKM8ELY-400/630	3	140	111	87	257	45.4	43	28	98	Ø14
	4	184	155	131	257	45.4	43	28	98	Ø14
EKM8ELY-800	3	210	160	140	275.5	50.5	53	40	98	Ø13
	4	280	230	210	275.5	50.5	53	40	98	Ø13

Rear Connection Installation Dimension (mm)

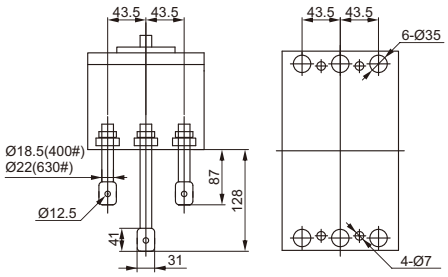
EKM8ELY-160



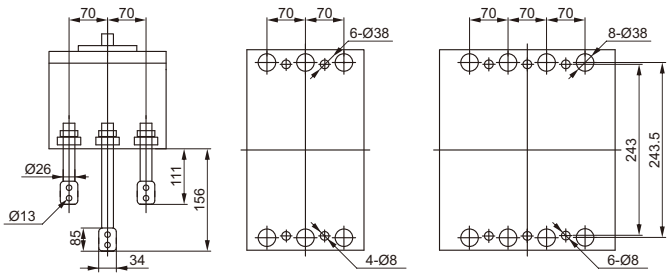
EKM8ELY-250



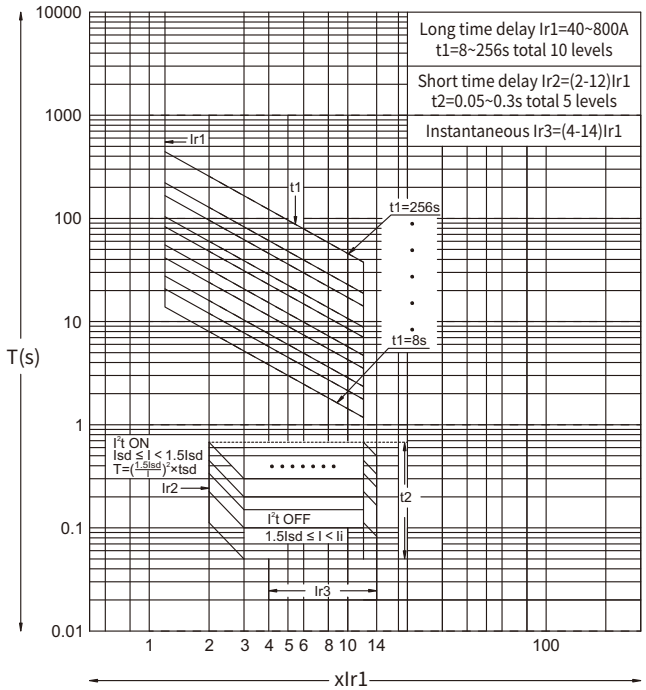
EKM8ELY-400/630



EKM8ELY-800



Tripping Curve



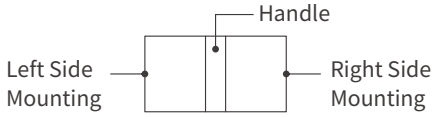
Overview of Accessories

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

EKM8T Thermo-Magnetic Double Adjustable Type MCCB without 2P

EKM8E, EKM8EY, EKM8ELY Accessory Table

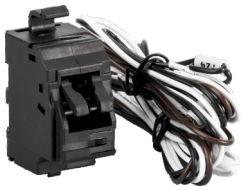
Accessory code	Accessory name	160AF		250AF		400/630AF		800/1250AF		2000AF	
		3P	4P	3P	4P	3P	4P	3P	4P	3P	4P
00	No	-	-	-	-	-	-	-	-	-	-
08	Alarm contact										
10	Shunt release										
18	Shunt release + Alarm contact										
20	Single auxiliary contact										
27	Dual auxiliary contacts										
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.

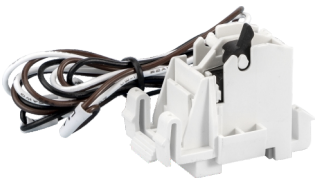
- Alarm contact
- Single auxiliary contact
- Dual auxiliary contacts
- Under voltage release
- Shunt trip (mechanical)
- Shunt trip (electronic)

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

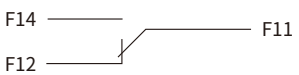
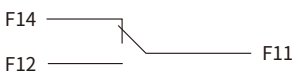
AX(S) - □ □ - □

- Connection: short-circuit type (code SX), terminal type (code JXH)
- Installation site: left side installation (code Z), right side installation (code Y), left and right side installation (omit)
- Frame size code (see table1)
- Name: code AX of auxiliary contact, code (S) of two

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

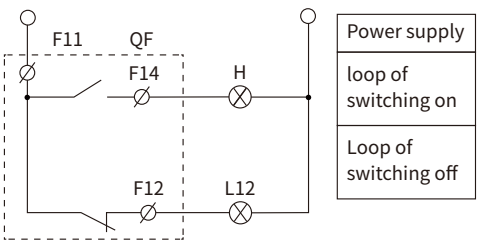
Electrical Wiring Diagram

Accessory name	ON	OFF/TRIP
Auxiliary		

Electrical Characteristics

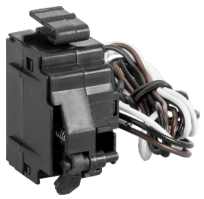
Operational voltage (V)	AC		DC		
	230	400	110	220	24
Operational current (A)	0.3	0.3	0.15	0.15	0.15

Wiring Diagram

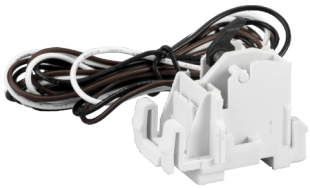


AL

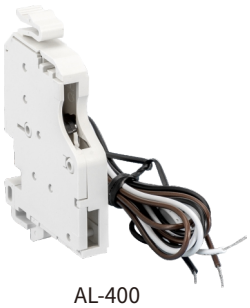
Alarm contact



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

AL - □ □ - □

- Connection: short-circuit type (code SX), terminal type (code JXH)
- Installation site: left side installation (code Z), right side installation (code Y), left and right side installation (omit)
- Frame size code (see table1)
- Name code of alarm contact

Frame Size Code

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

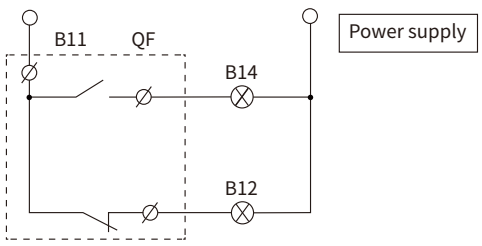
Electrical Wiring Diagram

Accessory name	ON/OFF	TRIP
Alarm	B14 — B11 B12	B14 B12 — B11

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

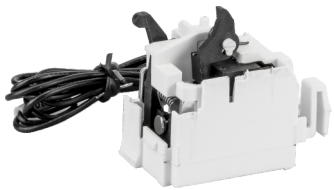
Wiring Diagram



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

SHT - □ □ - □

- Connection: short-circuit type (code SX), terminal type (code JXH)
- Installation site: left side installation (code Z), right side installation (code Y), left and right side installation (omit)
- Frame size code (see table1)
- Name code of shunt release

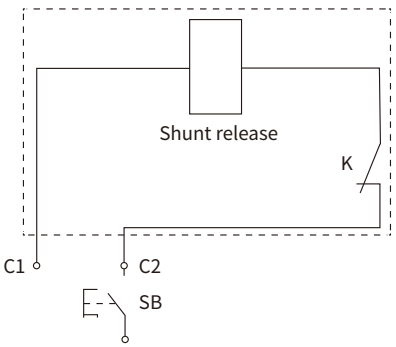
Frame Size Code

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

Electrical Characteristics

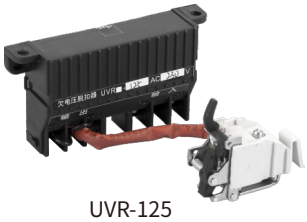
Operational voltage (V)	AC		DC		
	230	400	110	220	24
Operational current (A)	0.3	0.3	0.15	0.15	0.15

Electrical Wiring Diagram

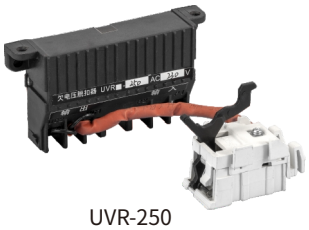


UVR

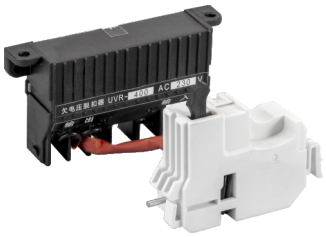
Under voltage release



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

UVR - □ □ - □

- Connection: short-circuit type (code SX), terminal type (code JXH)
- Installation site: left side installation (code Z), right side installation (code Y),
- Frame size code (see table1)
- Name code of under voltage release

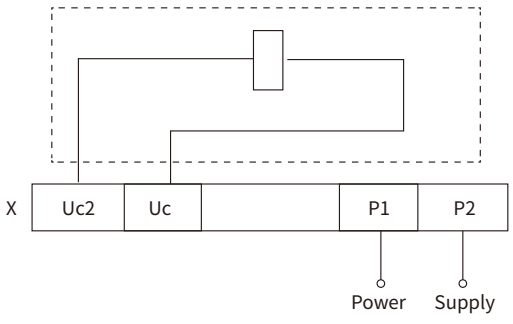
Frame Size Code

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

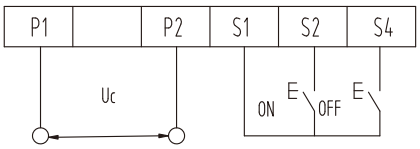
ECB - □ - □ - □

- Operating voltage
- Enterprise code
- Circuit breaker housing current level current
- Motor-driven mechanism

Electrical Characteristics

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

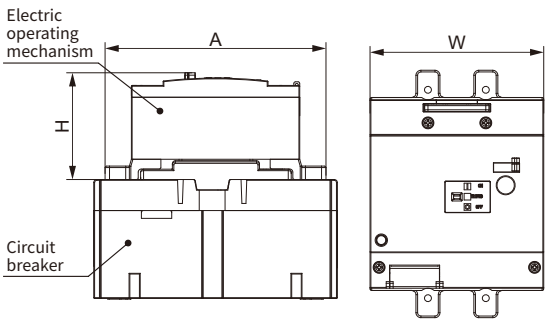
Electrical Wiring Diagram



WARNING

1. When manual operation, it should be operated 180° clockwise, and counterclockwise operation is prohibited.
2. 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).
3. 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

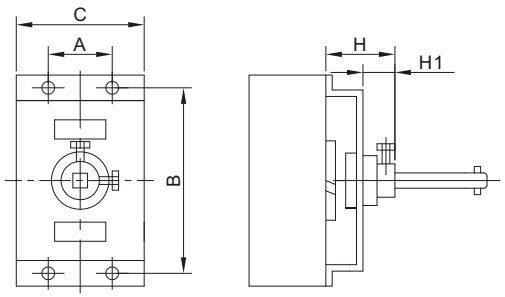
According to the ergonomics, the unique design and transmission structure are adopted, and the closing, opening and re-buckle operation of the circuit breaker are realized by rotating the handle.

Model Description

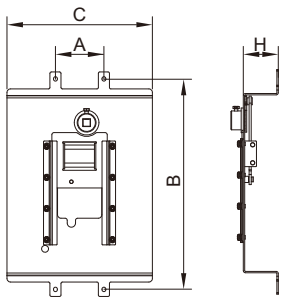
SC - □ □ - □ - □ - □

- Square rod shaft size
- Supplier
- Number of poles
- Mechanism shape
- Circuit breaker housing current level current
- Manual operational mechanism

Dimensions and Installation (mm)



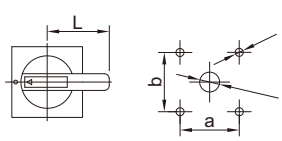
SC-125~800



SC-2000

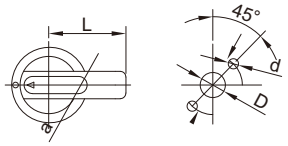
Model	A	B	C	H	H1
SC-125	25	111	77	58	13
SC-160	30	132	82	57	13
SC-250	35	126	105	64	13
SC-400/630	128	194	140	95	20
SC-800	198	243	208	94	20
SC-2000	70	304	210	50.5	-

A type handle



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

B type handle



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

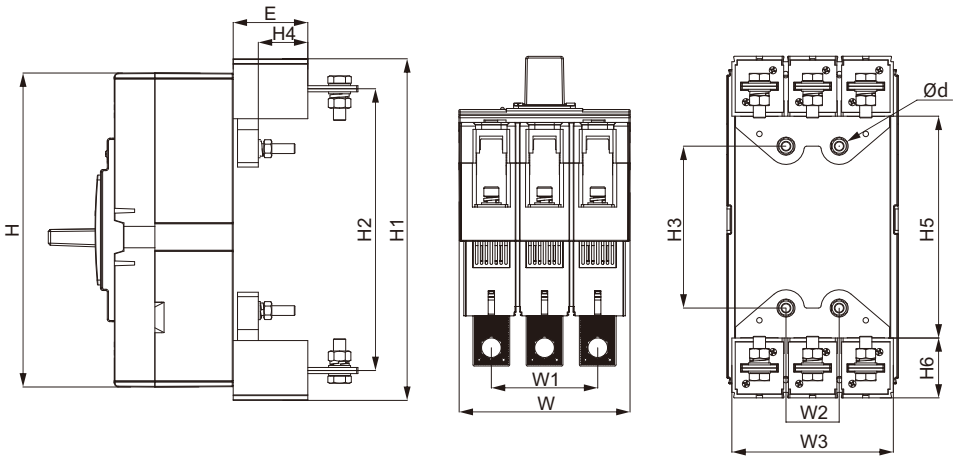
Enables the circuit breaker to have a flexible wiring method for mating with the switchboard.

Model Description

Z2H - □ - □ - □ - □

- Supplier
- Mechanism shape
- Current
- Circuit breaker housing current level current
- Plug-in plate rear split type

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		105	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			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

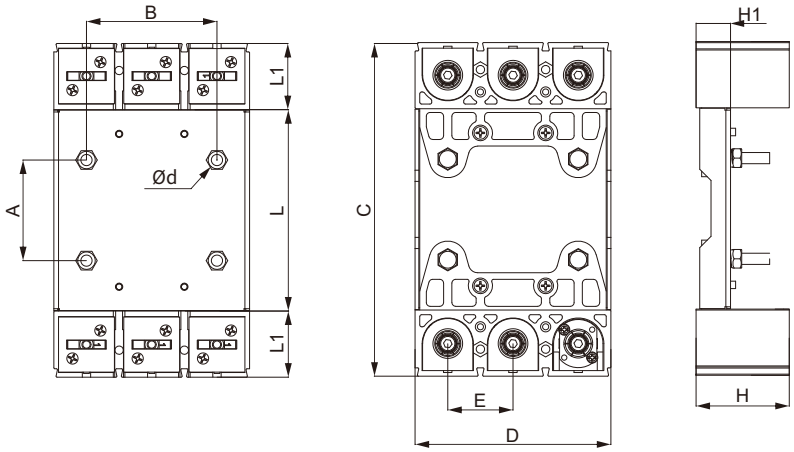
Enables the circuit breaker to have a flexible wiring method for mating with the switchboard.

Model Description

Z3H - □ - □ - □ - □

- Supplier
- Mechanism shape
- Current
- Circuit breaker housing current level current
- Plug-in board rear integrated type

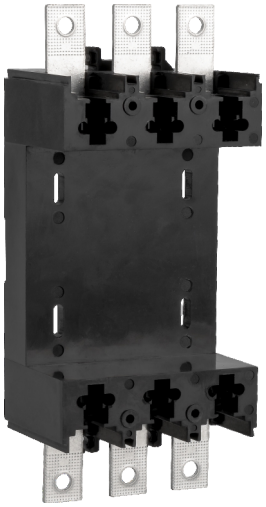
Dimensions and Installation (mm)



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

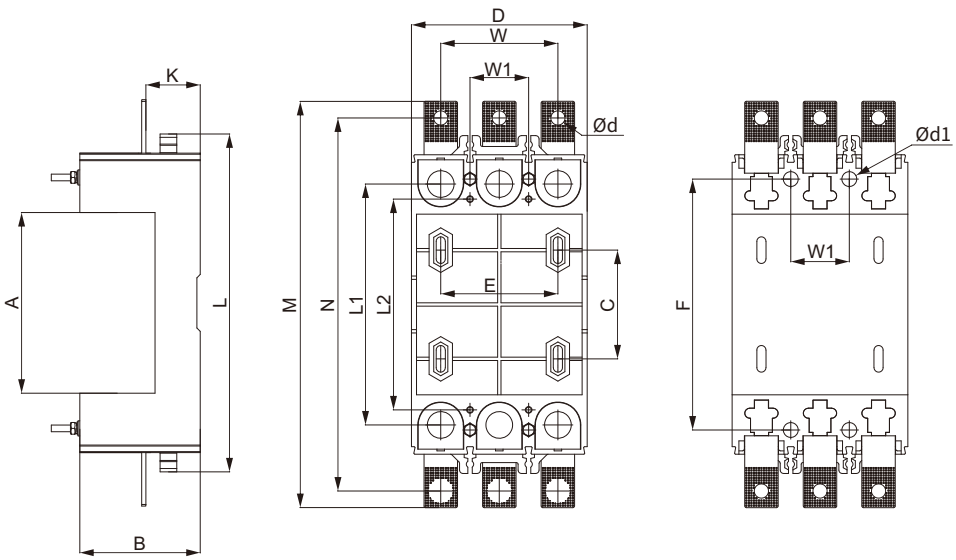
Enables the circuit breaker to have a flexible wiring method for mating with the switchboard.

Model Description

Z3H - □ - □ - □ - □

- Supplier
- Mechanism shape
- Current
- Circuit breaker housing current level current
- Plug-in plate front one type

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	/															

EKM6-250H

EKM6-400H

EKM6-800H

Scope of Application

EKM6 series high voltage circuit breaker (referred to circuit breaker) is specially designed for high voltage electrical system with rated voltage up to 1140V and rated current 63A~800A. This circuit breakers can effectively protect electrical systems like the output loading of the string Inverters and others such as the loading capacity of the AC combiner box in the photovoltaic systems.

Normal Working Conditions and Installation Conditions

- The elevation of the installation site can't exceed 2000m;
- The temperature is not higher than +70°C, not lower than -45°C (Over +40°C, use it through capacity reduction the specific need to negotiate with the manufacturer);
- Atmospheric conditions: such as 90% at 20°C,and taking into account the condensation on the surface due to temperature changes. When the arounding temperature is 40°C, the relative humidity of the atmosphere does not exceed 50% and a higher relative humidity is allowed at a lower temperature;
- The pollution level is 3;
- Installation category is III ;
- Installation magnetic field: The magnetic field of the installation position does not exceed 5 times the earth magnetic field in any direction;
- In a medium without explosion risk, and there is no gas and conductive dust sufficient to corrode metal and destroy insulation in the medium;
- Where there is no snow erosion;
- Installation conditions: It can be installed horizontally or vertically. There should be no significant impact or vibration at the installation place. It should not be installed in inflammable and explosive places;
- The circuit breaker has the isolation function, the symbol is .

Quick Selection Table

EKM6 - 630 H Z / 3 300 630 ☐

EKM6	630	H	Z	3	300	630	
↓	↓	↓	↓	↓	↓	↓	↓
Product code	Frame current		Operation mode	Poles	Accessory code	Rated current (A)	Installation method
EKM6 Series MCCB	250, 315, 400,630, 800	High voltage	None: Direct operation P: Electrically operation Z: Turning handle	3P	See accessory table	63,80,100,125,140, 160,180,200,225,250, 280,300,315,400,500, 630,700,800	None: front connection Z1: rear connection Z3Q: Plug-in front connection Z3H: Plug-in rear connection

Technical Data

Model		EKM6-250H	EKM6-315H	EKM6-400H	EKM6-630H	EKM6-800H
Rated frame current Inm (A)		250	315	400	630	800
Number of poles		3P				
Rated current In (A)		63,80,100,140, 125,160,180, 200,225,250	280,300,315	250,280,315, 350,400	400,500,630	630,700,800
Rated operational voltage Ue (V)		AC800, AC1000, AC1140				
Rated insulation voltage Ui (V)		1150		1250		
Rated impulse withstand voltage Uimp (kV)		12		12		
Rated ultimate short-circuit breaking capacity Icu (kA)	AC800	50		50		
	AC1000	20		20		
	AC1140	15		15		
Rated service short-circuit breaking capacity Ics (kA)	AC800	35		37.5		
	AC1000	15		15		
	AC1140	15		15		
Isolation function		Available				
Utilization category		Cat.A				
Mechanical life (Times)		20000				
Electrical life (Times)		1500				
Arcing distance (mm)		0				
Dimensions (mm)	Without arcing cover	200×107×135		257×150×156		270×182×156
	With arcing cover	280×107×135		307×150×156		320×182×156
Reference ambient temperature (°C)		40				

Selection of Cross-sectional Areas of Connecting Busbars and Cables

Selection of busbars

Rated current (A)	63	80	100	125	160	180,200,225	250	280,300	315,350	400
Cross-sectional area (mm^2)	16	25	35	50	70	95	120	185	185	240

Selection of cable

Rated current (A)	Cross-sectional areas of cables		Copper busbar size	
	Quantity	Sectional area (mm^2)	Quantity	Sectional area (mm^2)
500	2	150	2	30×5
630	2	185	2	30×8
700	2	240	2	50×5
800	2	240	2	50×5

Product Protection Requirements for Power Distribution

Rated current (A)	Thermal release (ambient temperature +40°C)		Tripping current of electromagnetic release
	Non-operation time at 1.05 times rated current (cold state) in hours	Operation time at 1.3 times rated current (hot state) in hours	
63	⩾1	⩽1	10In±20%
63＜In⩽800	⩾2	⩽2	

The thermal release of circuit breakers have the particularity of inverse time limit; The electromagnetic release is an instantaneous action, and its characteristics are shown in the table above.

Power Loss Table

Model	Current (A)	Total Power Loss for Three-phase/Four-phase (W)			
		Front panel wiring	Backboard wiring	Plug in front wiring	Plug in Backboard wiring
EKM6-250H	250	62	63.5	66	70
EKM6-315H	315	67	73	75	78
EKM6-400H	400	115	117	120	125
EKM6-630H	630	187	192	190	210
EKM6-800H	800	260	262	265	290

Applicable Working Environment and Compensation Coefficient

Model	Ambient Temperature						
	+40°C	+45°C	+50°C	+55°C	+60°C	+65°C	+70°C
EKM6-250H	1.0In	0.983In	0.965In	0.94In	0.924In	0.904In	0.882In
EKM6-315H	1.0In	0.982In	0.962In	0.942In	0.922In	0.901In	0.880In
EKM6-400H	1.0In	0.980In	0.960In	0.940In	0.918In	0.898In	0.877In
EKM6-630H	1.0In	0.979In	0.958In	0.937In	0.912In	0.895In	0.872In
EKM6-800H	1.0In	0.977In	0.956In	0.931In	0.905In	0.893In	0.868 In

Note: When the ambient temperature is lower than 50°C, the product can be used normally, and there is no capacity reduction.

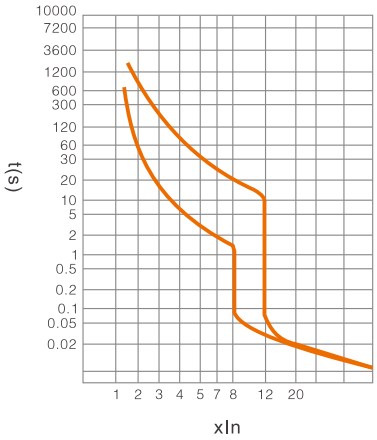
Derating Coefficient of Technical Parameters Based On Altitude

If the altitude exceeds 2000m in the applicable working environment, the electrical performance of the circuit breaker can be referred to the following table.

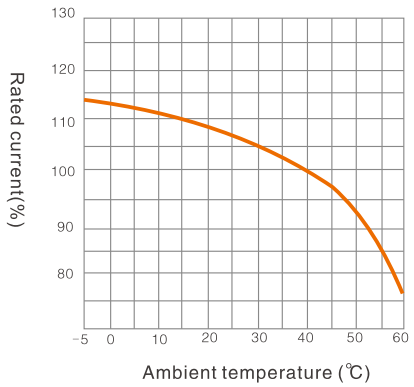
Altitude (M)	2000	2500	3000	3500	4000	4500	5000
Maximum operating current coefficient	1	1	0.98	0.97	0.95	0.94	0.93
Maximum operating voltage (V)	1140	1140	1060	1000	980	940	900
	1000	1000	900	850	810	770	730
	800	800	720	670	630	600	560
Power frequency withstand voltage (V)	3000	3000	2650	2500	2300	2150	2000
Insulation voltage (V)	1150	1150	1040	980	935	890	845
	1250	1250	1140	1080	1035	990	945

Tripping Characteristic Curve

EKM6-250H/315H

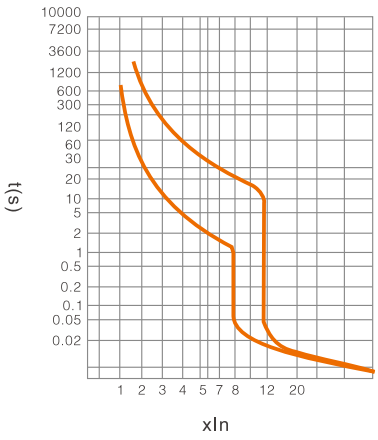


Tripping curve

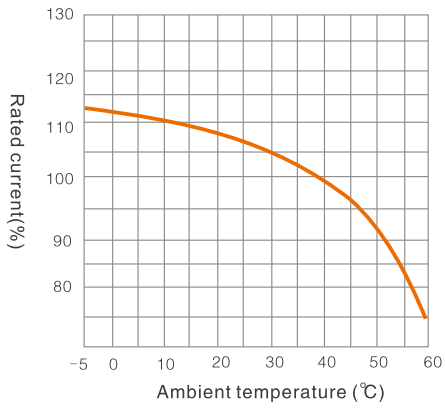


Temperature compensation curve

EKM6-400H

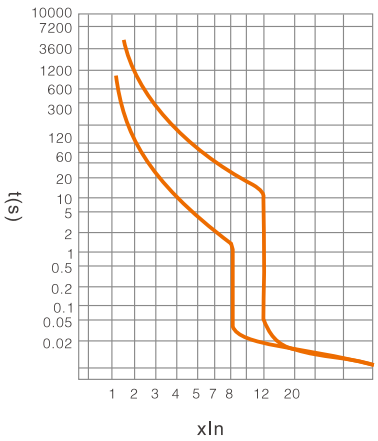


Tripping curve

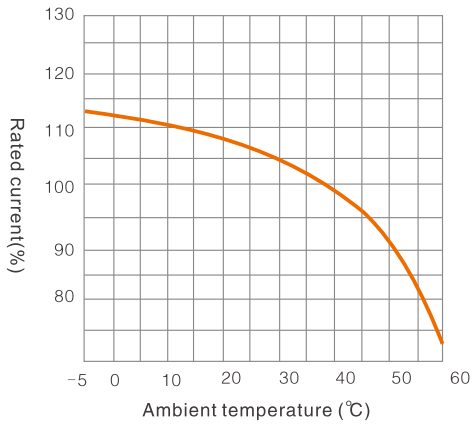


Temperature compensation curve

EKM6-630H/800H



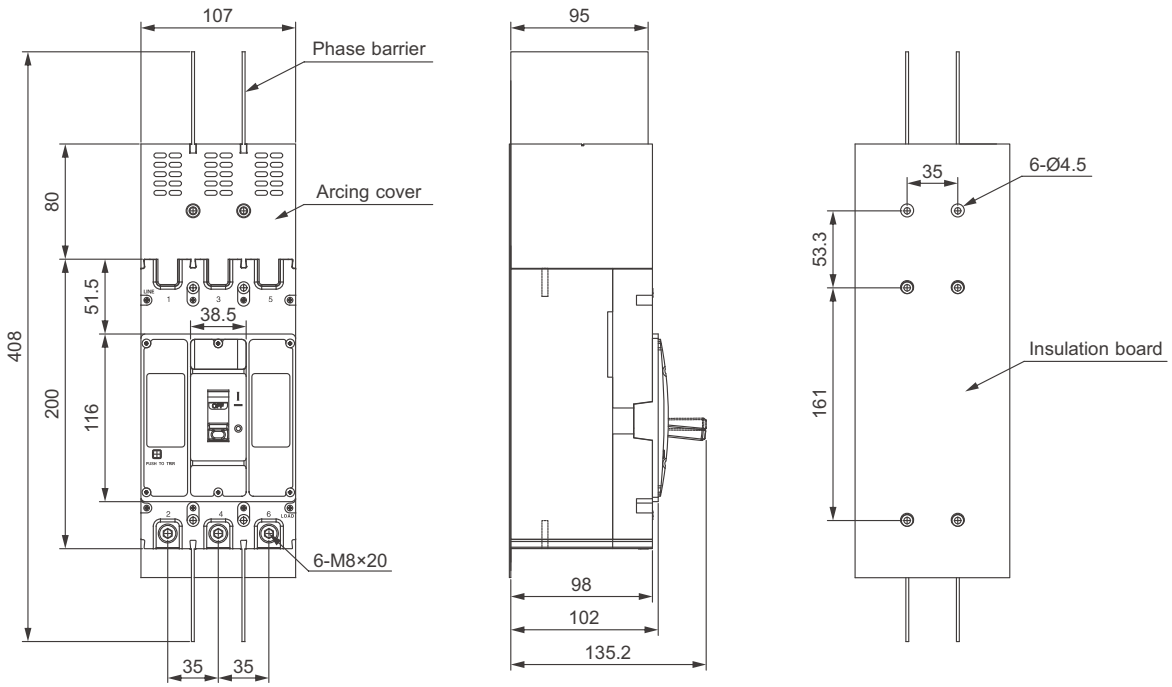
Tripping curve



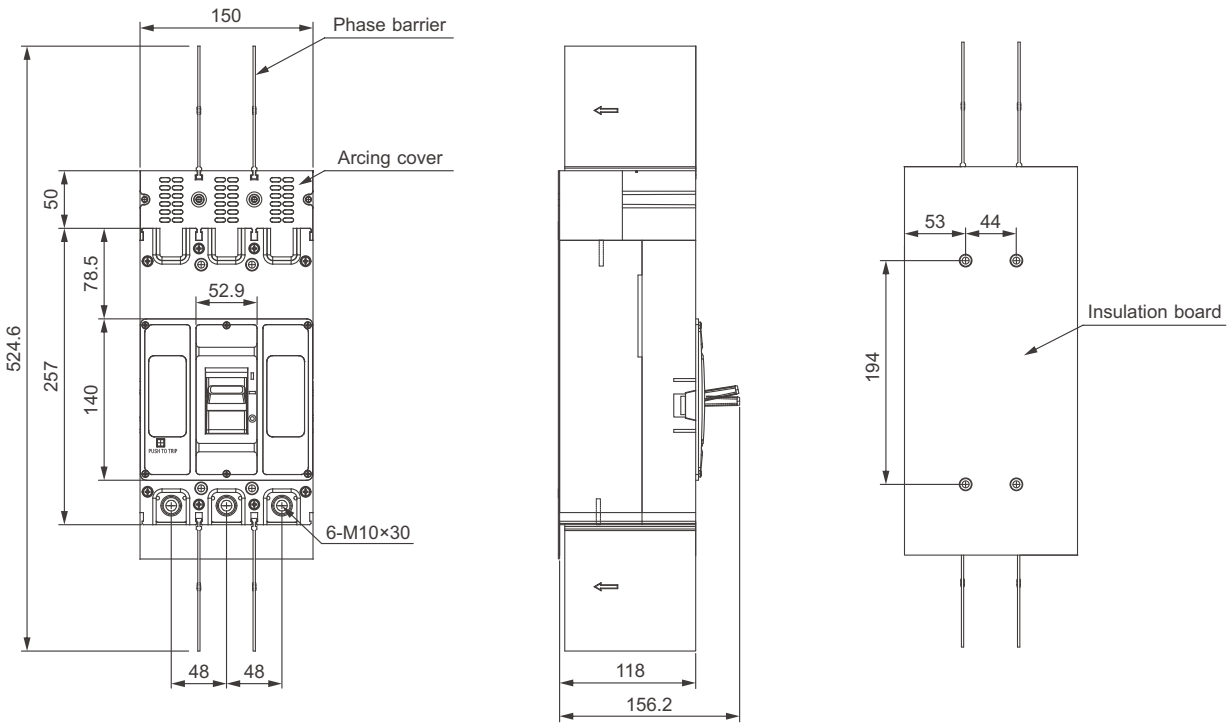
Temperature compensation curve

Overall Dimensions (mm)

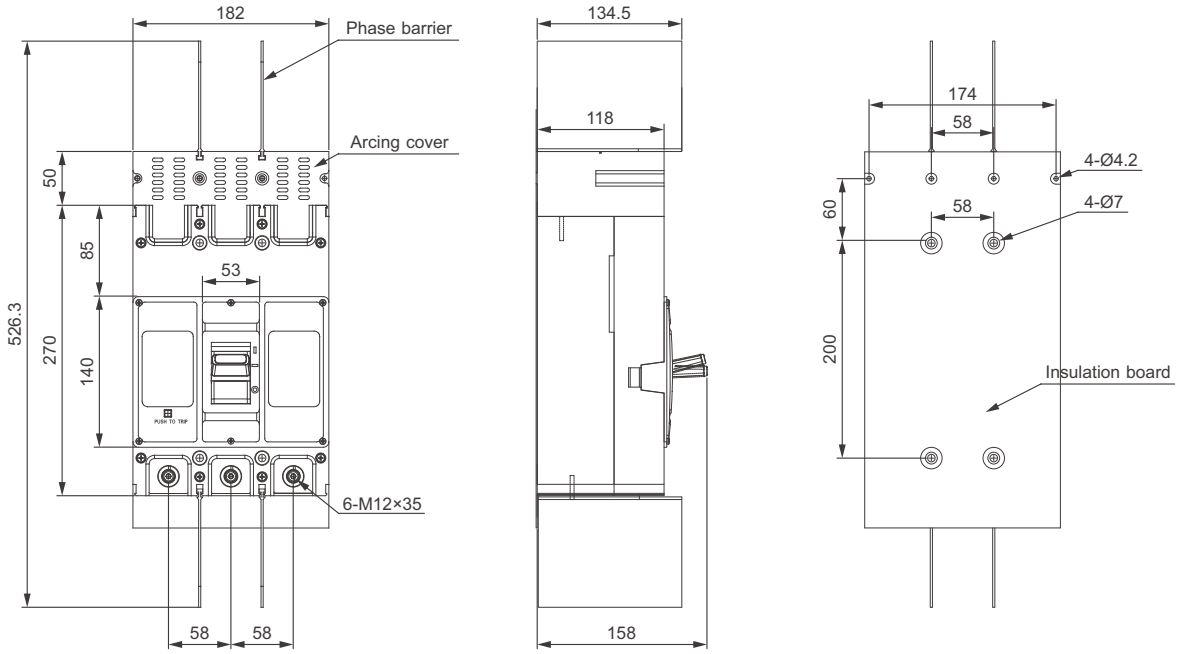
EKM6-250H/315H



EKM6-400H

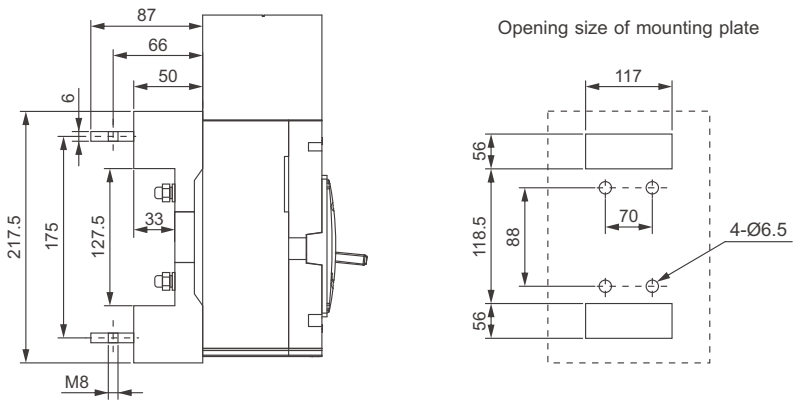


EKM6-630H/800H

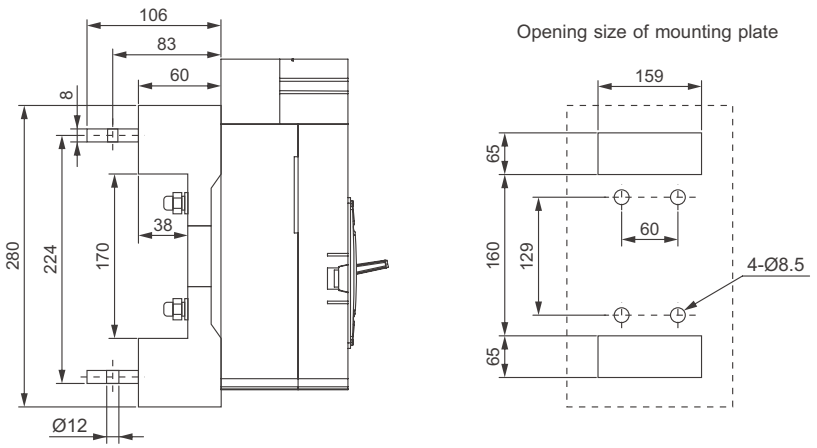


Mounting Dimension of Plug-in Rear Connection (mm)

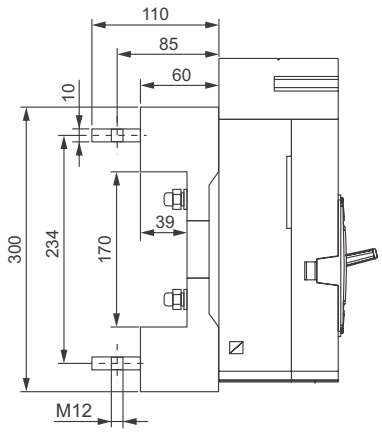
EKM6-250H/315H

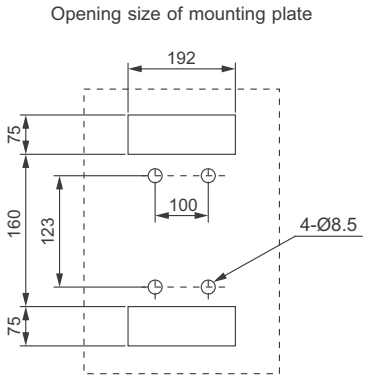


EKM6-400H

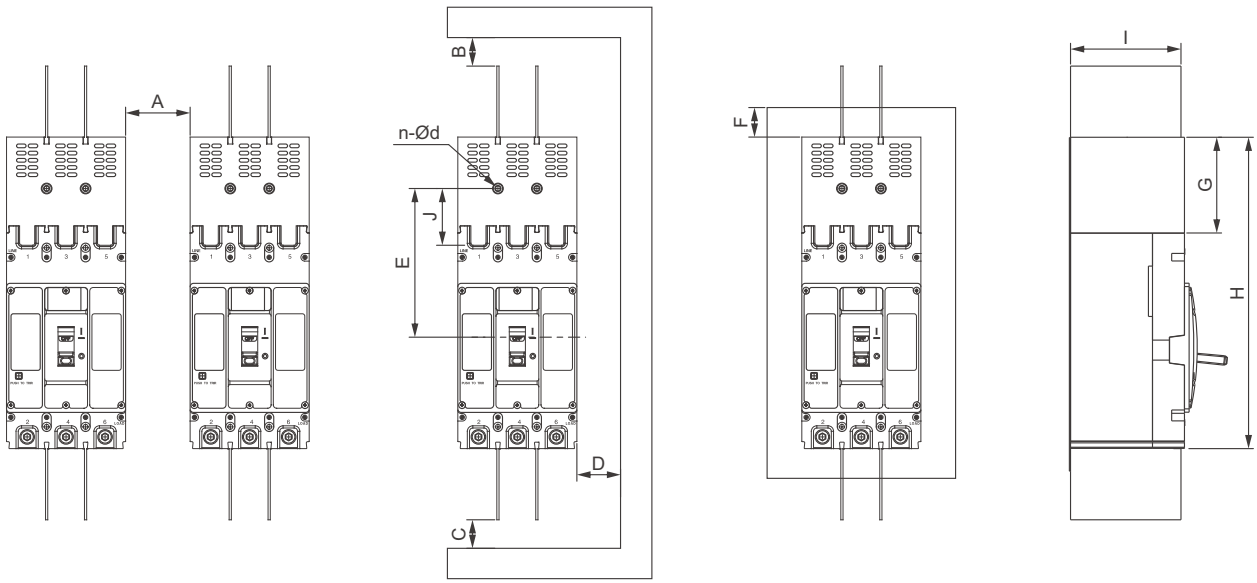


EKM6-630H/800H





Mounting Dimension



Model	Dimension (mm)										
	A	B	C	D	E	F	G	H	I	J	n-Ød
EKM6-250H	30	30	30	30	188	13	80	280	94	53	2-Ø4.5
EKM6-315H	30	30	30	30	188	13	80	280	94	53	2-Ø4.5
EKM6-400H	30	30	30	30	153.5	13	50	307	118	53	2-Ø4.5
EKM6-630H	30	30	30	30	185	13	50	320	118	60	2-Ø4.5
EKM6-800H	30	30	30	30	185	13	50	320	118	60	2-Ø4.5

Instruction: When using 1000V and 1140V, terminal covers should be installed on terminals 1, 3, and 5 of circuit breakers according to the diagram, and phase partition boards should be installed on terminals 2, 4, and 6 of circuit breakers, And install an insulation board between the circuit breaker and the metal mounting plate.

EKM6DC MCCB 250AF~800AF

1500V DC Moulded Case Circuit Breaker ---------- Standard_ IEC60947-2

EKM6DC-250 2P

EKM6DC-630V 2P

EKM6DC-800 3P

Scope of Application

EKM6DC Series DC Moulded Case Circuit Breaker is specially designed for DC electrical system with rated voltage up to DC1500V and rated current up to 800A. The Circuit Breaker can reliably protect the electrical system when the electrical loading of the system is overloaded or short-circuited, especially for PV and wind power application.

Normal Working Conditions and Installation Conditions

- The elevation of the installation site can't exceed 2000m;
- The temperature is not higher than +70°C, not lower than -45°C (Over +40°C, use it through capacity reduction the specific need to negotiate with the manufacturer);
- Atmospheric conditions: such as 90% at 20°C,and taking into account the condensation on the surface due to temperature changes. When the arounding temperature is 40°C, the relative humidity of the atmosphere does not exceed 50% and a higher relative humidity is allowed at a lower temperature;
- The pollution level is 3;
- Installation category is III;
- Installation magnetic field: The magnetic field of the installation position does not exceed 5 times the earth magnetic field in any direction;
- In a medium without explosion risk, and there is no gas and conductive dust sufficient to corrode metal and destroy insulation in the medium;
- Where there is no snow erosion;
- Installation conditions: It can be installed horizontally or vertically. There should be no significant impact or vibration at the installation place. It should not be installed in inflammable and explosive places;
- The circuit breaker has the isolation function, the symbol is .

Quick Selection Table

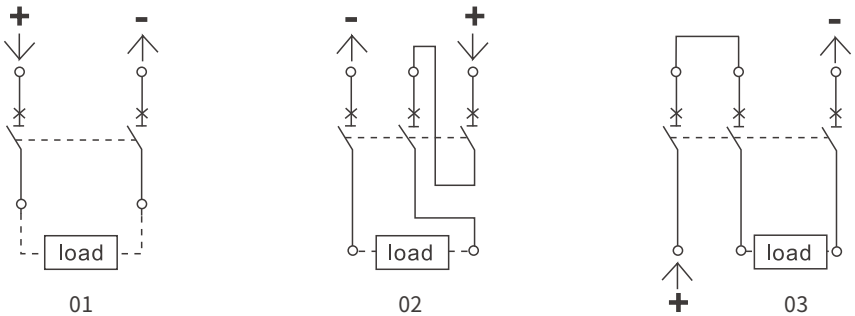
EKM6DC - 630 V Z / 3 300 630 ☐

EKM6	630	V	Z	3	300	630	
↓	↓	↓	↓	↓	↓	↓	↓
Product code	Frame current	High breaking	Operation mode	Poles	Accessory code	Rated current (A)	Installation method
EKM6DC Series DC MCCB	250, 315, 400, 630, 800	None: No V: High breaking	None: Direct operation P: Electrically operation Z: Turning handle	2P, 3P	See accessory table	63,80,100,125, 140,160,180,200, 225,250,280,300, 315,400,500,630, 700,800	Front connection (optional)

Technical Data

Model			EKM6DC-250	EKM6DC-315	EKM6DC-400	EKM6DC-400V	EKM6DC-630	EKM6DC-630V	EKM6DC-800
Rated frame current Inm (A)			250	315	400	400	630	630	800
Rated current In (A)			63,80,100, 140,125,160, 180,200,225, 250	280,300,315	250,315,350, 400	250,315,350, 400	400,500,630	400,500,630	630,700,800
Rated insulation voltage Ui (V)			1500						
Rated impulse withstand voltage Uimp (kV)			12						
Rated operational voltage Ue (V)	2P		DC250V, DC500V, DC750V, DC1000V, DC1500V						
	3P		DC1000V, DC1500V						
Rated ultimate short-circuit breaking capacity Icu (kA)	2P	DC250V	-	25	70	25	70	25	
		DC500V	-	25	70	25	70	25	
		DC750V	-	15	50	15	50	15	
		DC1000V	15	15	50	15	50	15	
		DC1250V	-	-	20	-	20	-	
		DC1500V	5	10	20	10	20	10	
	3P	DC1000V	-	30	-	30	-	30	
		DC1500V	20	25	-	25	-	25	
Rated service short-circuit breaking capacity Ics (kA)			100% Icu						
Connection method			2P: 01; 3P: 02		2P:01; 3P:03	2P: 01	2P:01; 3P:02	2P: 01	2P:01; 3P:02
Isolation function			Available						
Utilization category			Cat.A						
Mechanical life (Times)			20000		15000		20000		15000
Electrical life (Times)			1500		1000	800	1500		800
Arcing distance (mm)			⩽50		⩽100				
Dimensions (mm)	2P		200x73x135		270x130x156	275x106x178	270x130x156	275x106x178	270x130x156
	3P		200x107x135		270x182x156	-	270x182x156	-	270x182x156
Reference ambient temperature (°C)			40						

Wiring Diagram



Selection of Cross-sectional Areas of Connecting Busbars and Cables

Selection of busbars

Rated current (A)	63	80	100	125	160	180,200,225	250	280,300	315,350	400
Cross-sectional area (mm^2)	16	25	35	50	70	95	120	185	185	240

Selection of cable

Rated current (A)	Cross-sectional areas of cables		Copper busbar size	
	Quantity	Sectional area (mm^2)	Quantity	Sectional area (mm^2)
500	2	150	2	30×5
630	2	185	2	30×8
700	2	240	2	50×5
800	2	240	2	50×5

Product Protection Requirements for Power Distribution

Rated current (A)	Thermal release (ambient temperature +40°C)		Tripping current of electromagnetic release
	Non-operation time at 1.05 times rated current (cold state) in hours	Operation time at 1.3 times rated current (hot state) in hours	
63	⩾1	⩽1	10In±20%
63＜In⩽800	⩾2	⩽2	

The thermal release of circuit breakers have the particularity of inverse time limit; The electromagnetic release is an instantaneous action, and its characteristics are shown in the table above.

Power Loss Table

Model	Current when energized (A)	Total Power Loss for Three-phase/Four-phase (W)
EKM6DC-250	250	40
EKM6DC-315	315	43
EKM6DC-400	400	115
EKM6DC-400V	400	105
EKM6DC-630	630	187
EKM6DC-630V	630	127
EKM6DC-800	800	262

Applicable Working Environment and Compensation Coefficient

Model	Ambient Temperature						
	+40°C	+45°C	+50°C	+55°C	+60°C	+65°C	+70°C
EKM6DC-250	1.0In	1.0In	1.0In	0.95In	0.93In	0.91In	0.88In
EKM6DC-315	1.0In	1.0In	1.0In	0.95In	0.93In	0.91In	0.88In
EKM6DC-400	1.0In	1.0In	1.0In	0.93In	0.91In	0.89In	0.85In
EKM6DC-630	1.0In	1.0In	1.0In	0.92In	0.90In	0.89In	0.83In
EKM6DC-800	1.0In	1.0In	1.0In	0.92In	0.89In	0.85In	0.80In

Note: The product can operate normally when the ambient temperature is below 50°C, and there is no derating

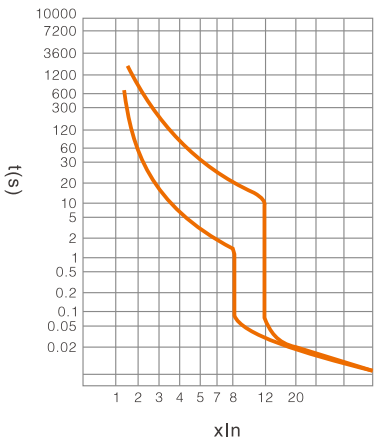
Derating Coefficient of Technical Parameters Based On Altitude

If the altitude exceeds 2000m of the applicable working environment, the electrical performance of the circuit breaker can be referred to the table below

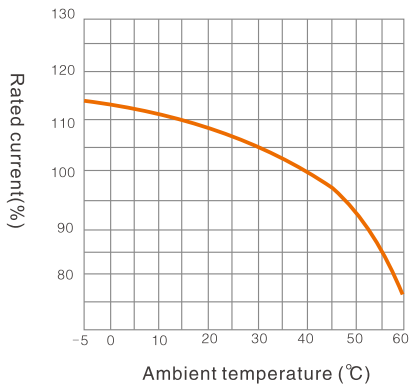
Altitude (M)	2000	2500	3000	3500	4000	4500	5000
Maximum operating current correction factor	In	In	0.98In	0.95In	0.93In	0.91In	0.89In
Maximum operating voltage correction factor	Ue	Ue	Ue	Ue	Ue	Ue	Ue
Power frequency withstand voltage correction factor	U	U	U	U	U	U	U

Tripping Characteristic Curve

EKM6DC-250/315

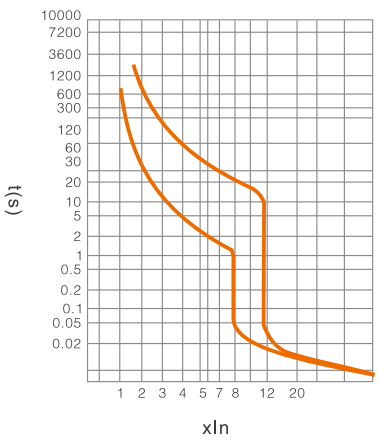


Tripping curve

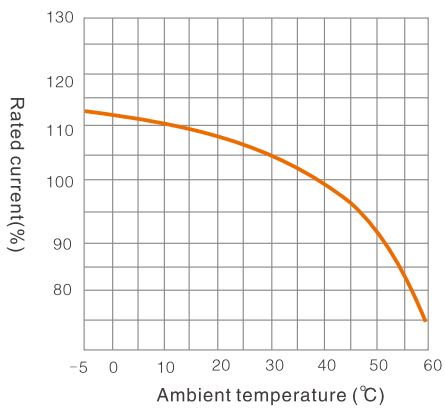


Temperature compensation curve

EKM6DC-400

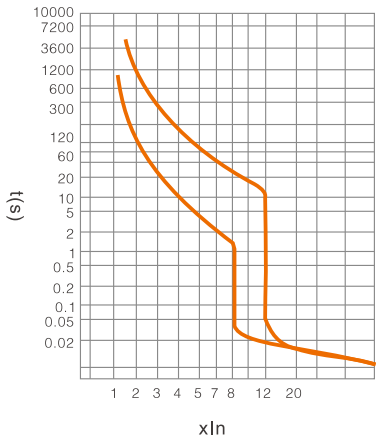


Tripping curve

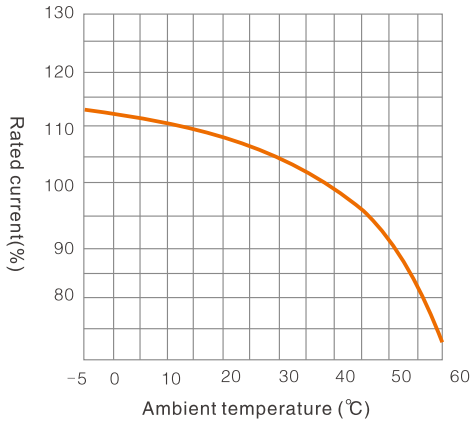


Temperature compensation curve

EKM6DC-630/800



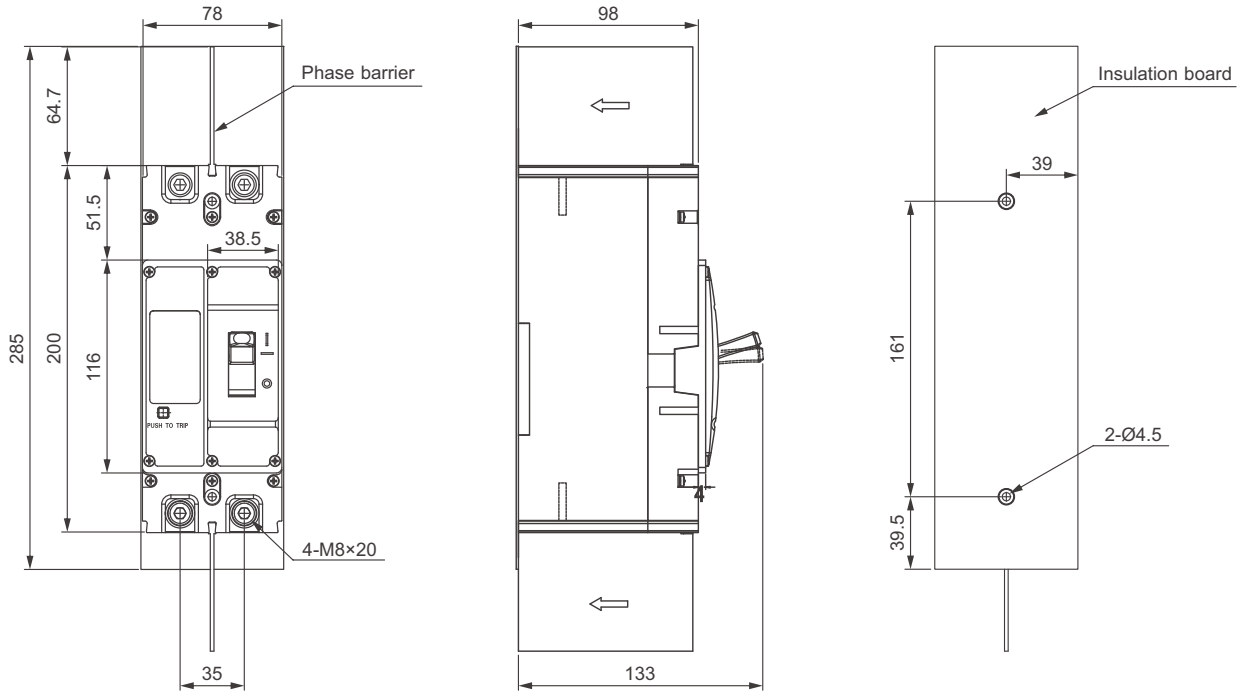
Tripping curve



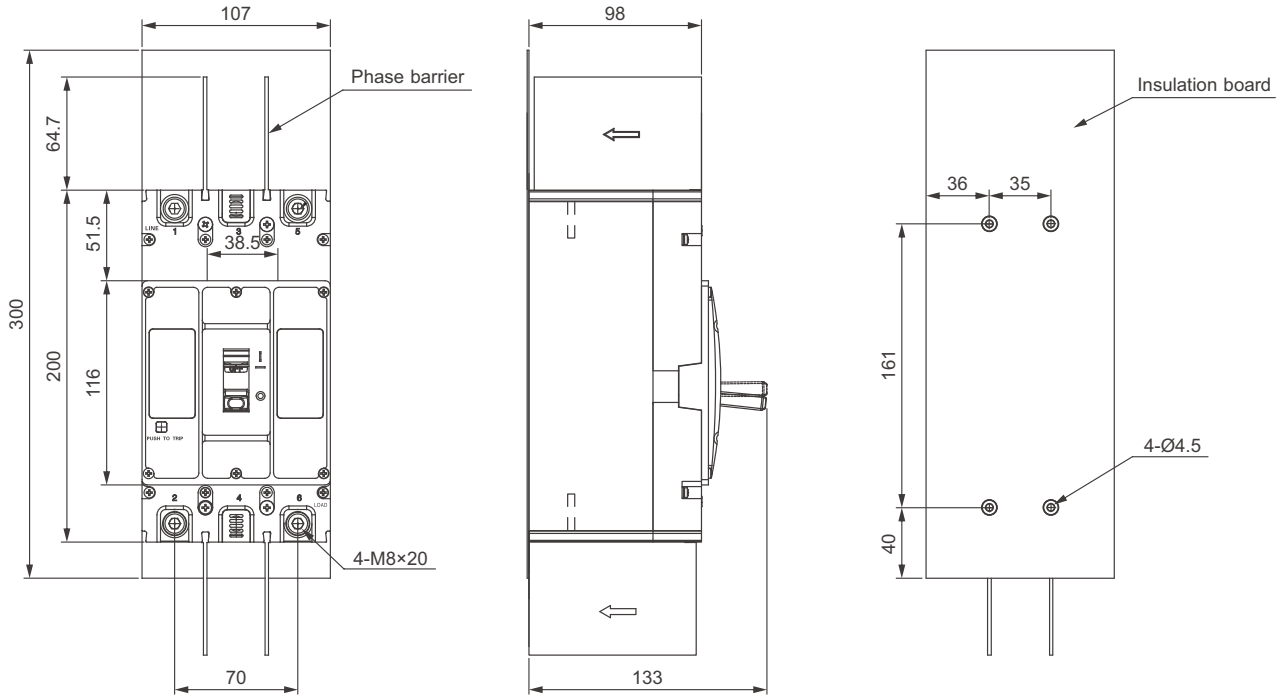
Temperature compensation curve

Overall Dimensions (mm)

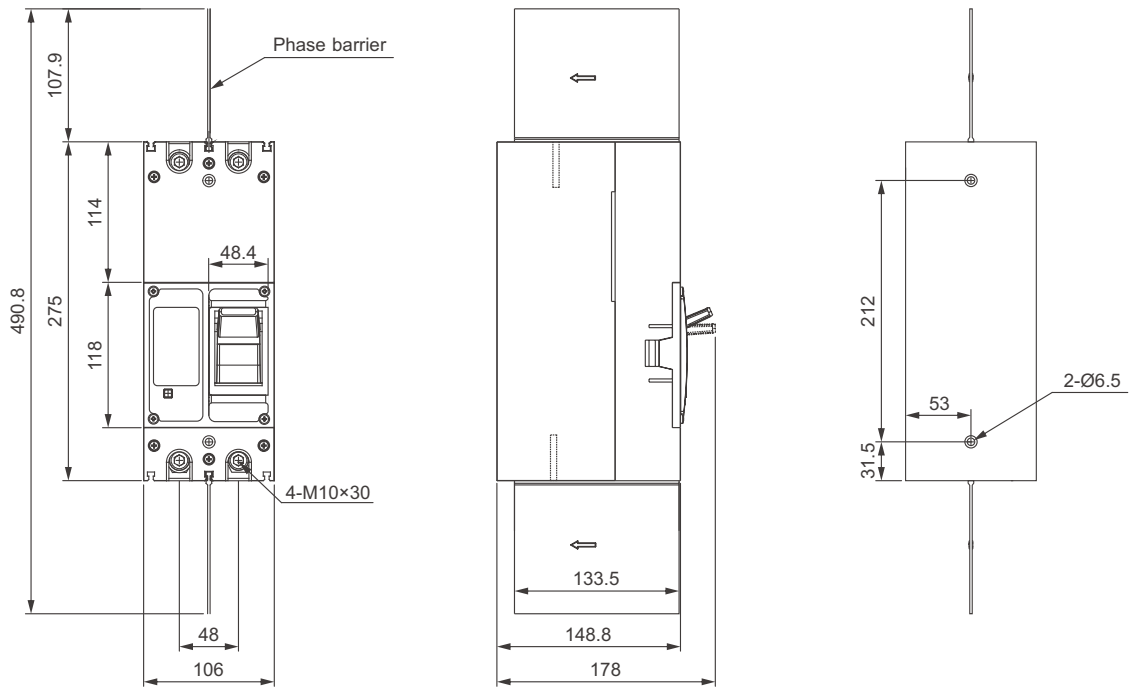
EKM6DC-250/315 (2P)



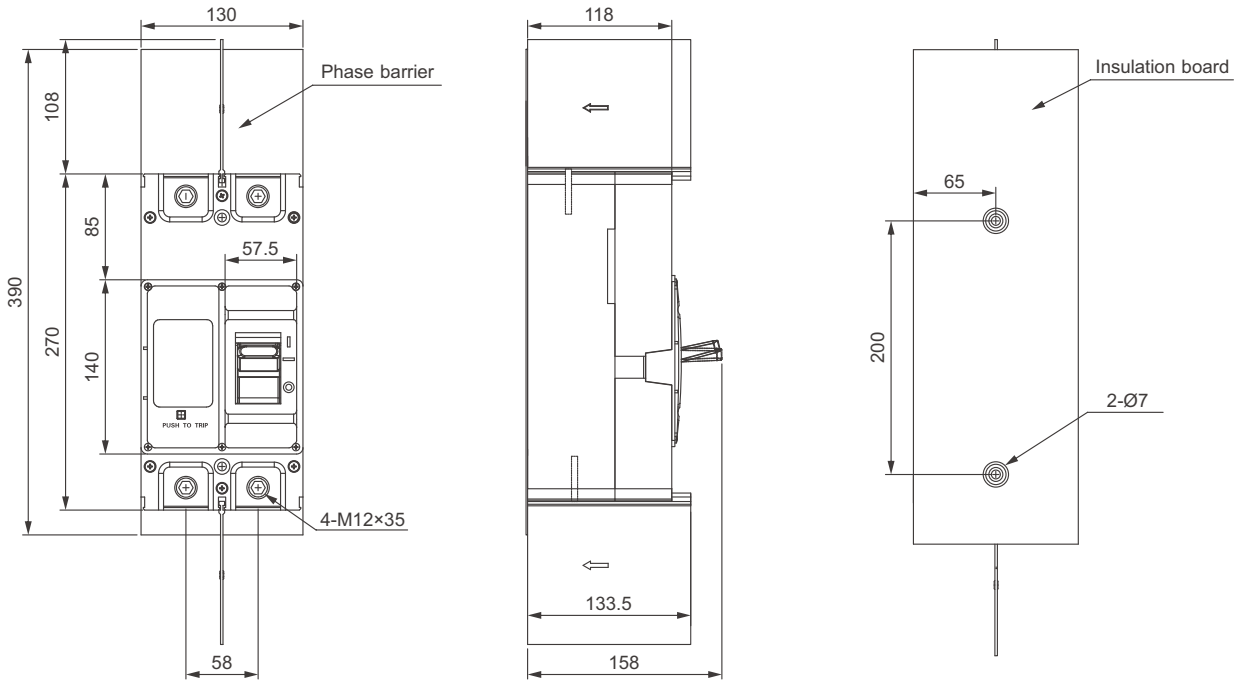
EKM6DC-250/315 (3P)



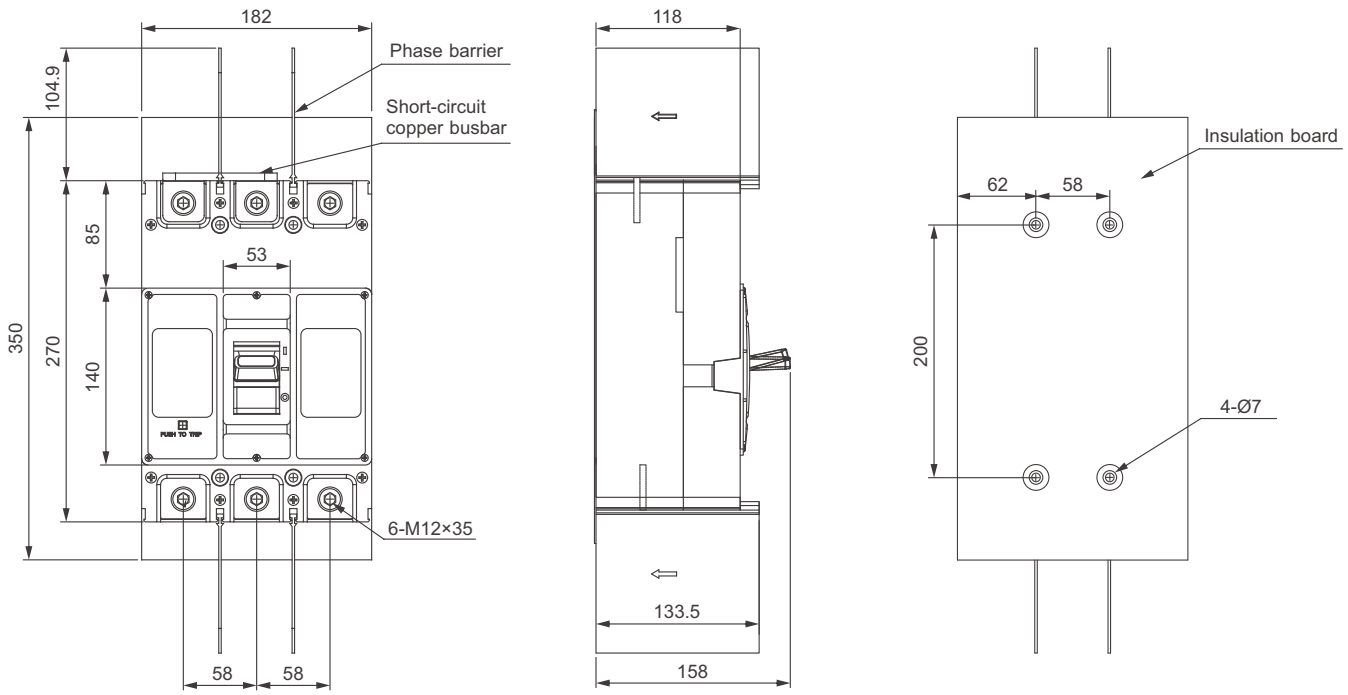
EKM6DC-400V/630V (2P)



EKM6DC-400/630/800 (2P)



EKM6DC-400/630/800 (3P)



Accessory Table

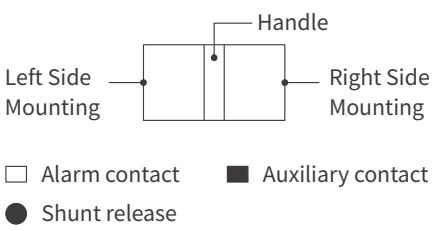
Electrical accessories for internal accessories of circuit breakers.
According to user needs, circuit breaker accessories can be directly led out with wires (wire length is 50cm, special requirements need to be specified) or equipped with terminal blocks.

Accessory code	Accessory name	EKM6-250H/315H	EKM6-400H	EKM6-630H/800H
		3P	3P	3P
208, 308	Alarm contact			
210, 310	Shunt release			
220, 320	Auxiliary contact			
240, 340	Shunt release + Auxiliary contact			
260, 360	Two group Auxiliary contact			
218, 318	Shunt release alarm contact			
228, 328	Auxiliary contact alarm contact			
248, 348	Shunt trip alarm contact			
268, 368	Two group Auxiliary contact + Alarm contact			

EKM6DC Accessory (DC Type)						
Accessory code	Accessory name	EKM6DC-250/315		EKM6DC-400V/630V	EKM6DC-400/630/800	
		2P	3P	2P	2P	3P
208, 308	Alarm contact					
210, 310	Shunt release					
220, 320	Auxiliary contact					
240, 340	Shunt release + Auxiliary contact					
260, 360	Two group Auxiliary contact					
218, 318	Shunt release alarm contact	-		-	-	
228, 328	Auxiliary contact alarm contact					
248, 348	Shunt trip alarm contact	-		-	-	
268, 368	Two group Auxiliary contact + Alarm contact	-		-	-	

Note: The first digit in the release method and internal accessory code indicates that 2 represents an electromagnetic (instantaneous) release, and 3 represents a thermal-magnetic (compound) release; the last two digits represent the internal accessory code, with 00 indicating no accessory.

For EKM6-630H and EKM6DC-630, in specifications 248 and 348, there is one pair of auxiliary contacts (one normally open and one normally closed), while in specifications 268 and 368, there are three pairs of auxiliary contacts (meaning three normally open and three normally closed).

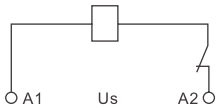


Accessories and Their Functions (Inner Accessories)

Shunt release

- Can be used for long-distance tripping of circuit breakers;

Rated voltage Us	AC230V, AC400V 50Hz DC220V, DC110V, DC24V
Reliable operating range	70%-110% Us

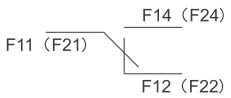
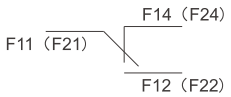


Note: When selecting a DC24V shunt release, the power supply at the terminal of the shunt release must be ⩾ 50W.

Auxiliary contact

- Used to indicate the opening and closing status of circuit breakers;
- One group is one normally open and one normally closed for Inm of 125 and 250;
- One set is two normally open and two normally closed, used for 1nm at 400, 630, and 800;

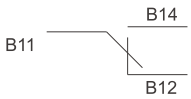
Inm(A)	250~800
Ith(A)	3
Ith(A) AC400V	0.3
Ith(A) DC220V	0.15

Circuit breaker status	Auxiliary contact status
When in the "opening" position	
When in the "closing" position	

Alarm contact

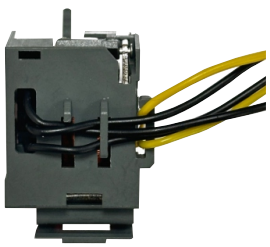
- Used to provide a signal if it trips caused by overload, short-circuit or undervoltage;
- The alarm contact does not operate during normal opening and closing of the circuit breaker, but only operates in a free tripping state or when a fault trips. After the circuit breaker is reconnected, the alarm contact will return to its original state.

Inm(A)	250~800
Ith(A)	3
Ith(A) AC400V	0.3
Ith(A) DC220V	0.15

Circuit breaker status	Auxiliary contact status
At opening and closing position	
At the "free release" alarm position	

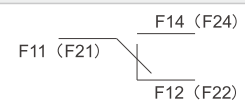
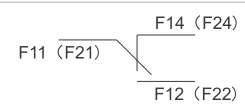
Note: For all internal accessories, except for undervoltage release devices, if the installation size is affected by external wiring terminals, lead type accessories can be selected.

Shunt release & Auxiliary contact



- Integrated, space saving, suitable for multi accessory installation;
- The performance and parameters of shunt release are consistent with those of independent shunt release.
- The auxiliary contact is one normally open and one normally closed;

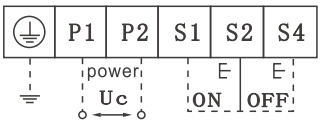
Rated voltage Us	AC230V, AC400V 50Hz DC220V, DC110V, DC24V
Reliable operating range	70%-110% Us
Inm(A)	250~800
Ith(A)	3
Ith(A) AC400V	0.3
Ith(A) DC220V	0.15

Circuit breaker status	Auxiliary contact status
When in the "opening" position	
When in the "closing" position	

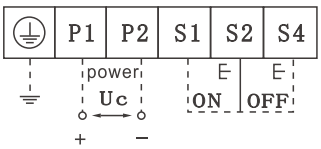
CD2 Type Motor Mechanism

- It can be used for electric and closing operation of circuit breakers;
- Available for EKM6, EKM6DC circuit breaker.

Schematic diagram of CD2 type motor mechanism



AC wiring diagram 1

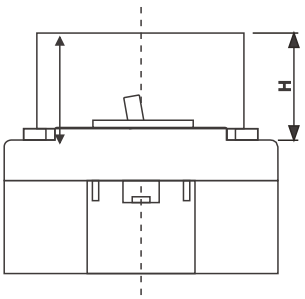


AC wiring diagram 2

P1, P2	External power input
SB1, SB2	Operation buttons (user provided)
Voltage specifications	AC50Hz/60Hz 110V, 230V DC24V, 110V, 220V

Note: The dashed box represents the wiring diagram of the internal accessories of the circuit breaker.

Installation of motor mechanism

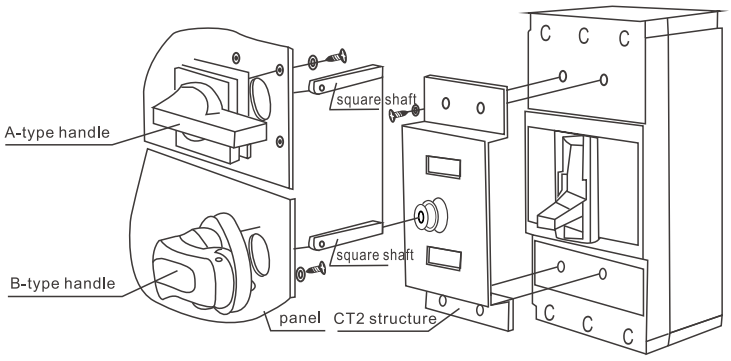


Frame current	H (mm)
250/315	98
400	136
630/800	138

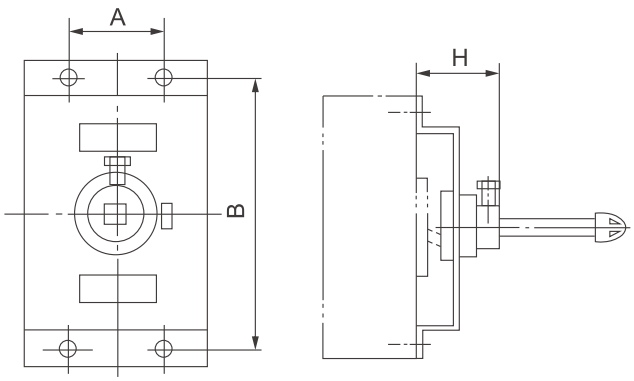
CT2 Type Extended Rotary Handle

- Used for manual opening and closing operations outside the circuit breaker cabinet.
- Can be used for EKM6, EKM6DC circuit breakers.

Installation diagram



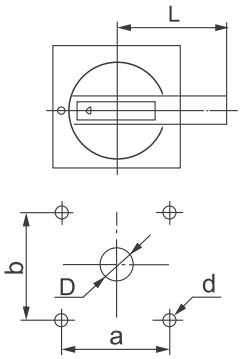
Installation dimension



Model		Dimension (mm)		
		A	B	H
EKM6-250H/315H		35	161	70
EKM6-400H		137	200	76
EKM6-630H/800H		167	214	76.3
EKM6DC-250/315	2P	-	161	62
	3P	35	161	70
EKM6DC-400/630/800	2P	116	200	76.3
	3P	167	214	76.3
EKM6DC-400V/630V		89	217	48

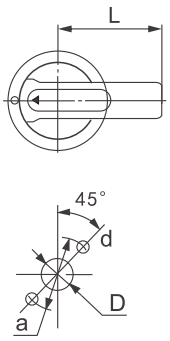
Outline and Installation Dimensions

A type handle



Handle specifications	Frame current	
	250-315	400-800
D	Ø35	Ø35
d	Ø4.5	Ø4.5
a	65	65
b	65	65
L	95	125

B type handle



Handle specifications	Frame current	
	250-315	400-800
D	Ø35	Ø35
d	Ø4.5	Ø4.5
a	65	65
b	53	53
L	95	125

EKM7 MCCB 1140V

High Voltage MCCB ---------- Standard_IEC60947-2

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 Frame Current Inm (A)		320					630				
Rated current In (A)		16,20,25,32,40,50,63,75,80,100,125,140, 160,180,200,225,250,320A					225,250,320,350,400,500,630A				
Pole		3P									
Rated working voltage Ue (V)		380/415V, 690V, 800V, 1000V, 1140V									
Rated insulation voltage Ui (V)		1200V									
Rated impulse withstand voltage Uimp (kV)		12kV									
Power frequency withstand voltage (1min)(V)		3500V									
Rated ultimate short-circuit breaking capacity Icu(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
	H	100	65	50	30	20	100	65	50	32	20
Rated operating short-circuit breaking capacity Ics(kA)	M	/	60	50	20	12	/	60	50	20	12
	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		5In or 10In									
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

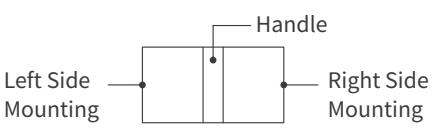
Derating Coefficient of Technical Parameters Based On Altitude

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	1In	0.99In	0.98In	0.97In	0.96In	0.95In	0.94In
Rated voltage	1Ue	0.95Ue	0.88Ue	0.85Ue	0.82Ue	0.8Ue	0.75Ue
Rated power frequency withstand voltage	1U	0.95U	0.88U	0.85U	0.82U	0.8U	0.75U

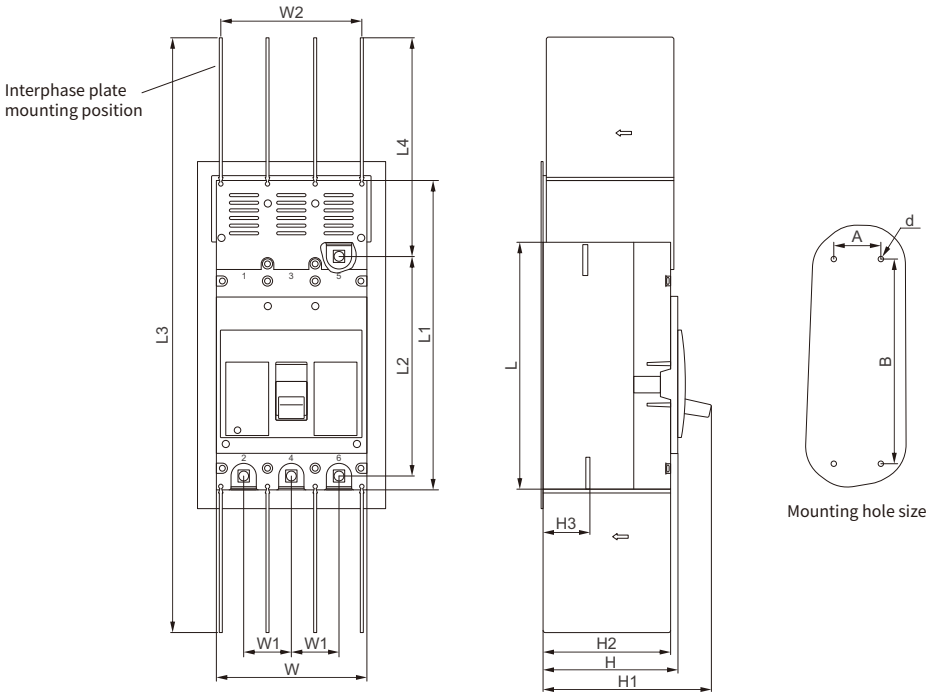
Accessory Table

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		



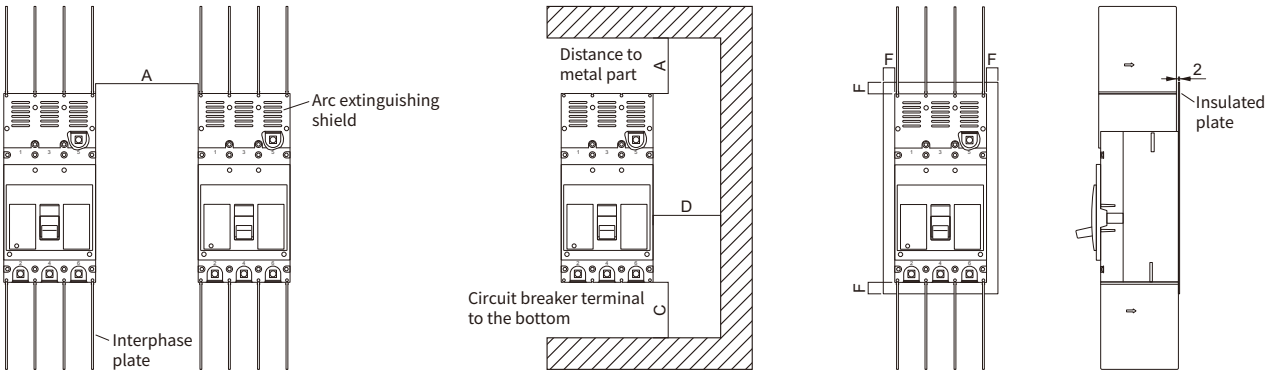
- Alarm contact
- Single auxiliary contact
- Dual auxiliary contacts
- Under voltage release (mechanical)
- Shunt trip (mechanical)

Overall Dimensions and Mounting Dimensions



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

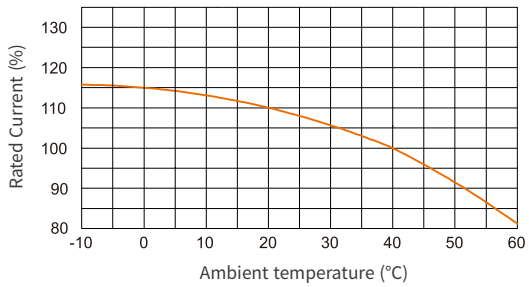
Mounting Diagram



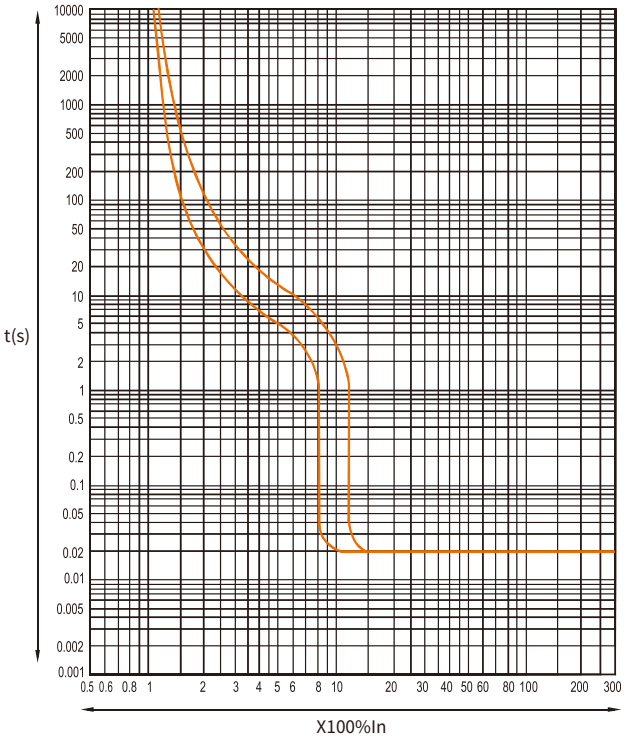
Model	Dimensions (mm)				
	A	B	C	D	F
EKM7-320	50	50	50	50	25
EKM7-630	50	50	50	50	20

Tripping Curve

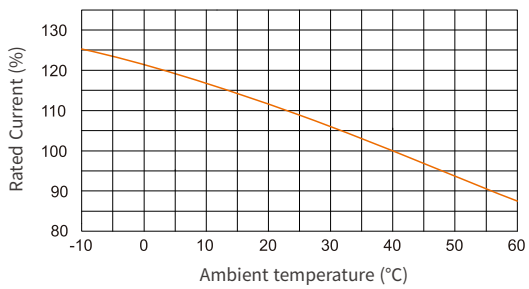
EKM7-320 Current-Temperature Characteristic



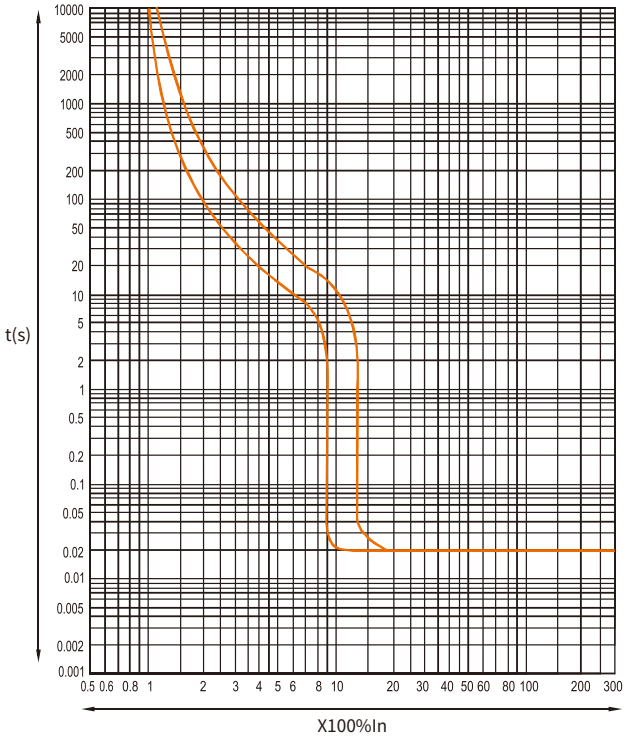
EKM7-320 Time/current Characteristic Curve



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 ±22.5°.
  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

Model		EKM7DC-320	EKM7DC-400	EKM7DC-630	EKM7DC-1600
Rated Frame Current Inm (A)		320	400	630	1600
Rated current In (A)		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), DC		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	2500
Electrical life (times)		1000	1000	1000	500
Arcing distance (mm)		50 (plus arc suppression cover)			
Instantaneous tripper		5In or 10In			

Capacity Reduction Coefficient

EKM7DC Molded case circuit breaker temperature change reduction coefficient table

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

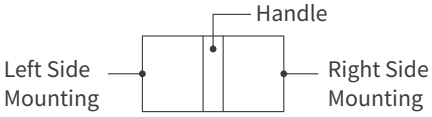
High Altitude Capacity Reduction

EKM7DC Molded case circuit breaker high altitude capacity reduction coefficient table

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

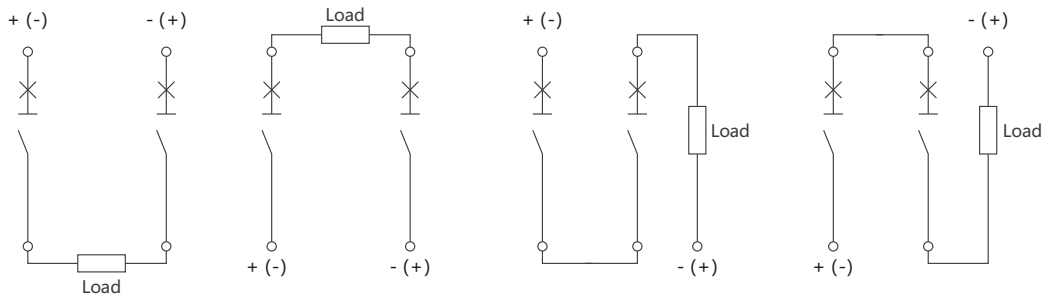
Accessory Table

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	-			



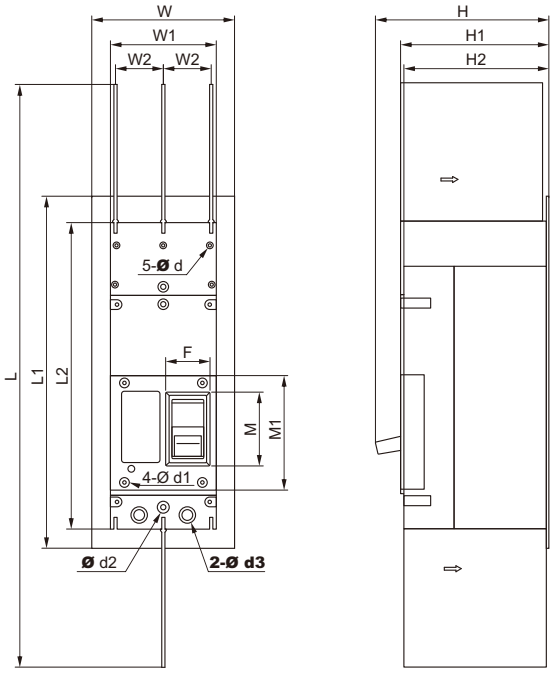
- Alarm contact
- Single auxiliary contact
- Dual auxiliary contacts
- Under voltage release (mechanical)
- Shunt trip (mechanical)

DC Circuit Breaker Connection Mode



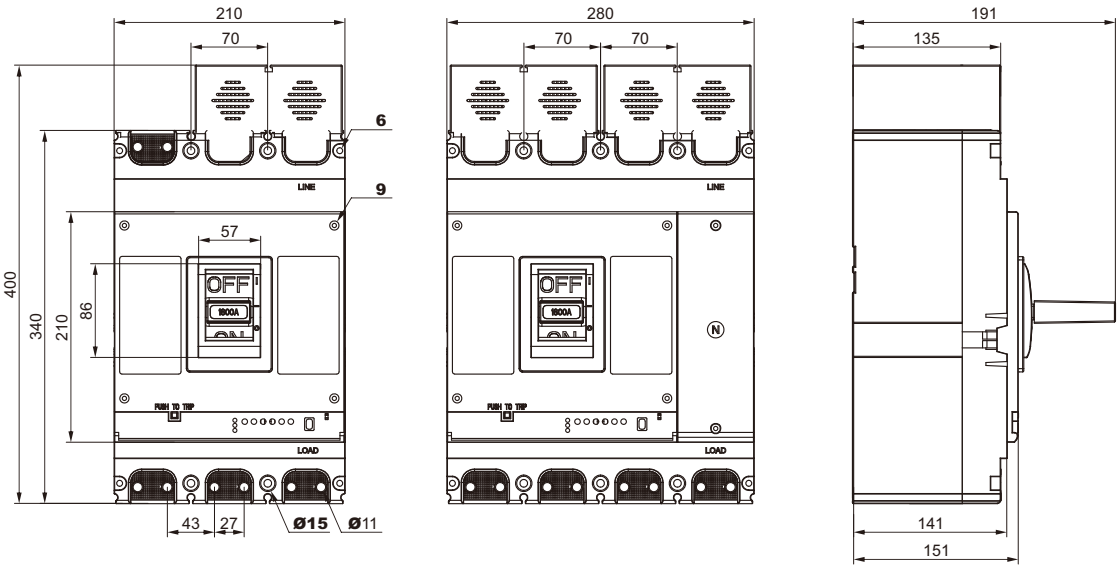
Note: (1) + positive power supply, - negative power supply.
The product has non-polar wiring characteristics, it can meet different wiring needs.

Overall Dimensions and Mounting Dimensions (mm)

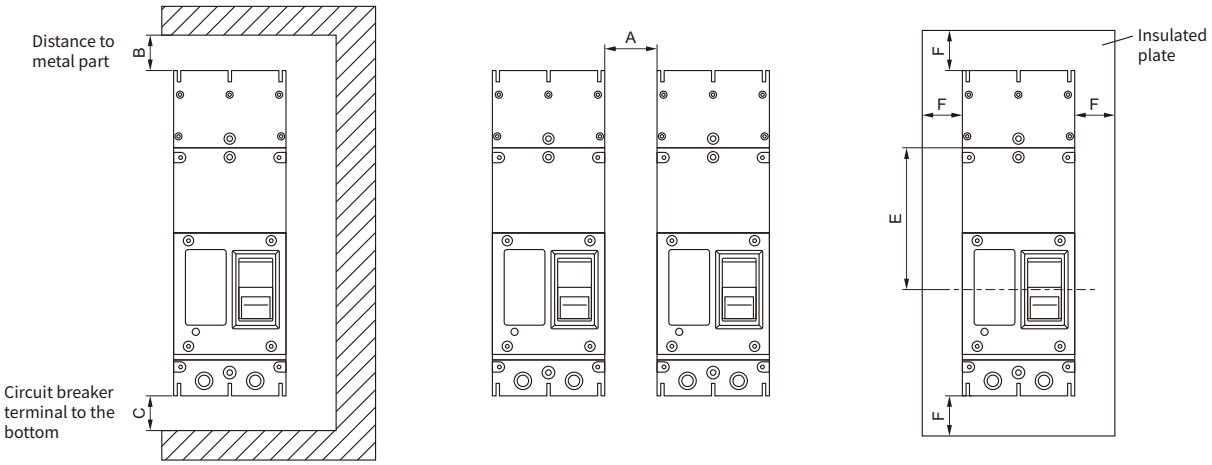


Model	W	W1	W2	L	L1	L2	M	M1	F	H	H1	H2	d	d1	d2	d3
EKM7DC-320	/	99	38	465	/	245	51	101	28	135	118	/	/	7	10	12.5
EKM7DC-400	148	110	49	605	365	319	76	119	45	178	154	150	8	11	13	19
EKM7DC-630	148	110	49	605	365	319	76	119	45	178	154	150	8	11	13	19

EKM7DC-1600



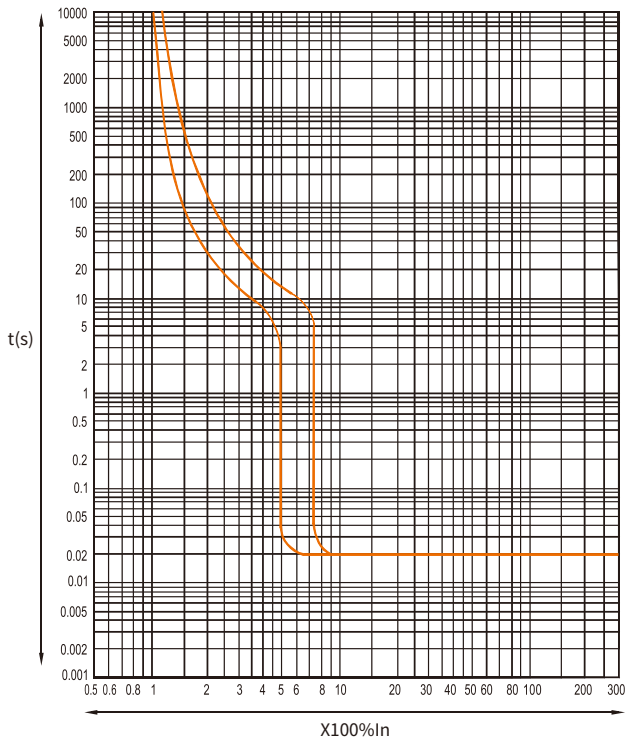
Mounting Diagram



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

Time/characteristic curve



Air Circuit Breaker ---------- Standard_IEC60947-2

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 3200 6300	3P: three-pole 4P: four-pole	400A 2500A 630A 2900A 800A 3200A 1000A 3900A 1250A 4000A 1600A 5000A 2000A 6300A	D: drawout type F: fixed type	AC230V AC400V DC220V DC110V	Horizontal wiring Vertical wiring

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
□ Undervoltage release □ Undervoltage instantaneous release □ Undervoltage time-delay release: D1s D3s D5s □ AC230V □ DC220V □ AC400V □ DC110V	□ Horizontal interlocking (wirerope interlocking) □ Vertical interlocking (wirerope interlocking)	□ One lock one key □ Two locks one key □ Three locks two keys □ Five locks three keys	□ Intelligent horizontal interlocking	□ Doorframe □ Phase partition □ 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)[1]	□	●	□	●
Making current protection (MCR)[2]	□	○	□	●
Out-of-limit tripping (HSIOC)	○	○	○	○
Leakage protection/alarm (R)[3]	—	□	□	□
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[2]	—	□	□	●
Protection parameter lockout	●	●	●	●
Zone interlocking (ZSI) function[4]	—	—	□	
Communication function	—	●	□	●

●Standard configuration ○ Auxiliary configuration — No configuration
□Functions that can be added to the standard configuration with appropriate hardware
Note:
[1]: Need to configure the relay module;
[2]: Need to configure microswitch for detecting opening/closing of circuit breaker;
[3]: Need to configure the leakage transformer (zero-sequence current transformer);
[4]: Need to configure the ZSI circuit module.

Main Performance Indexes

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

— null

Overall and Mounting Dimensions

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

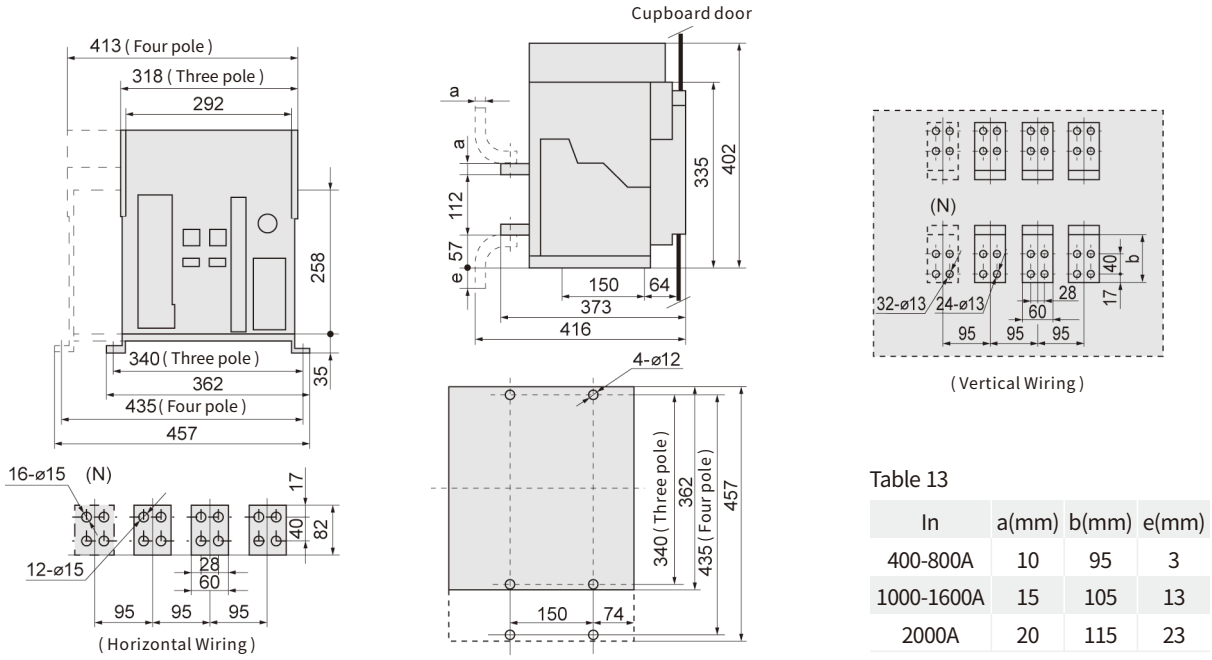


Table 13

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

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

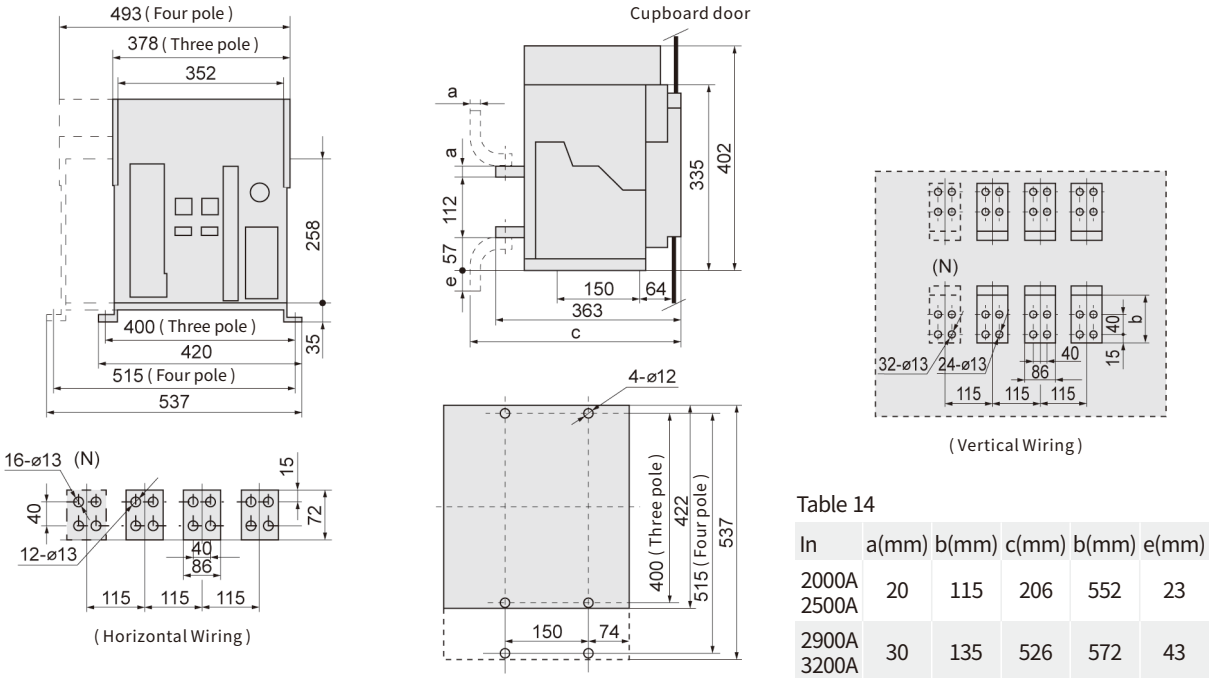


Table 14

In	a(mm)	b(mm)	c(mm)	b(mm)	e(mm)
2000A 2500A	20	115	206	552	23
2900A 3200A	30	135	526	572	43

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

Overall and Mounting Dimensions

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

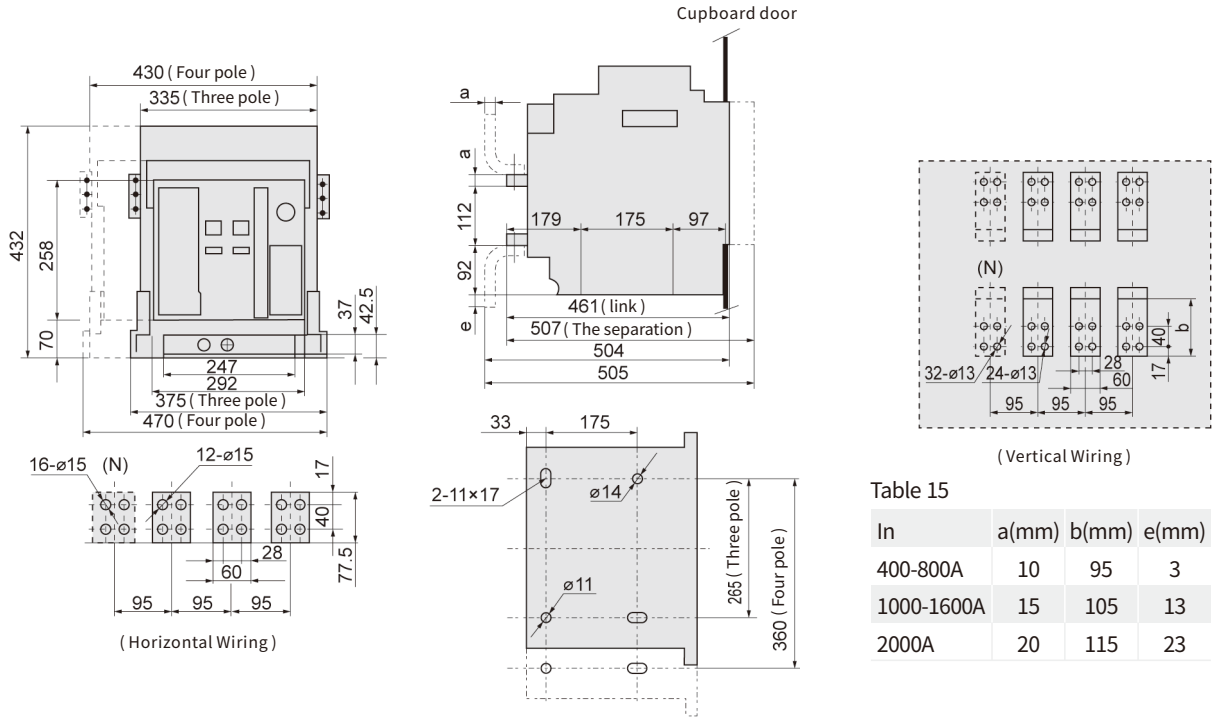


Table 15

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

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

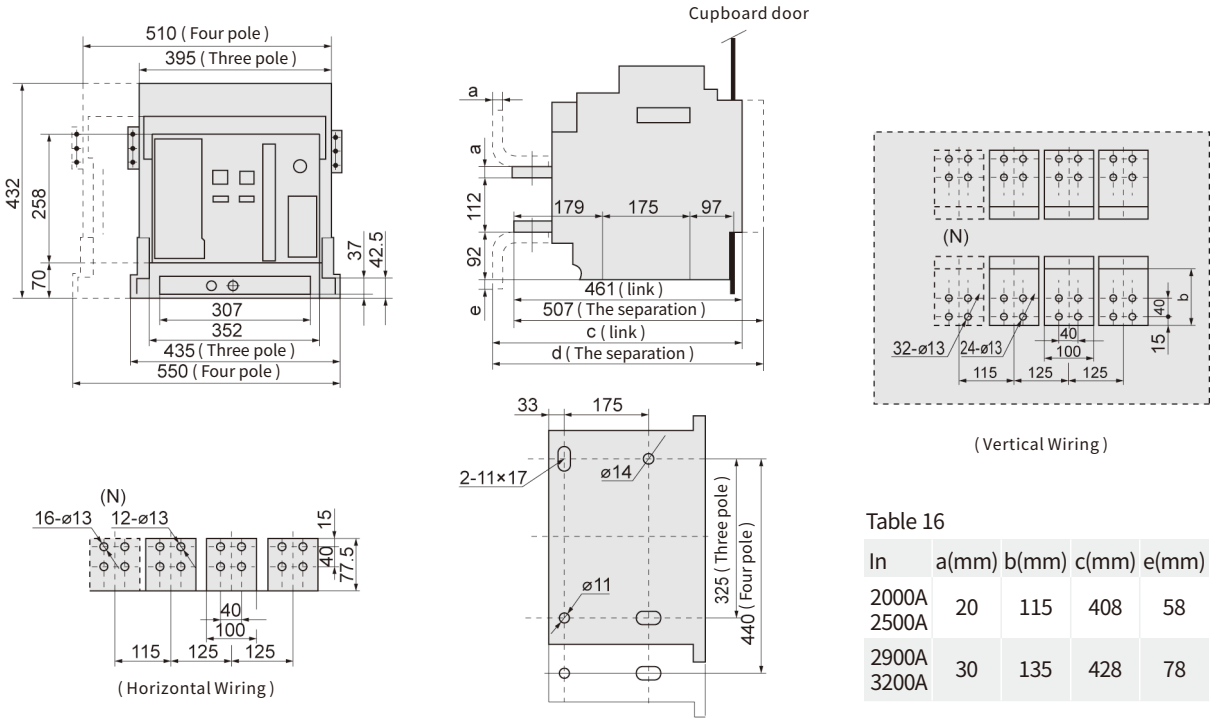
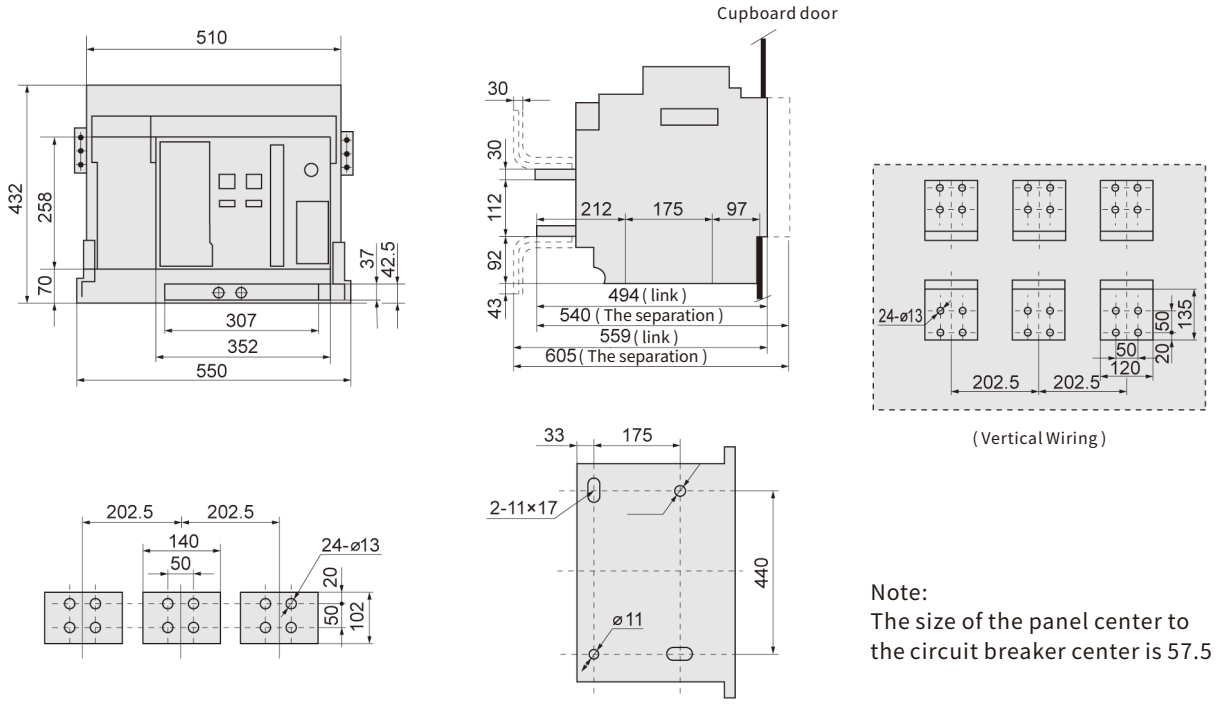


Table 16

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

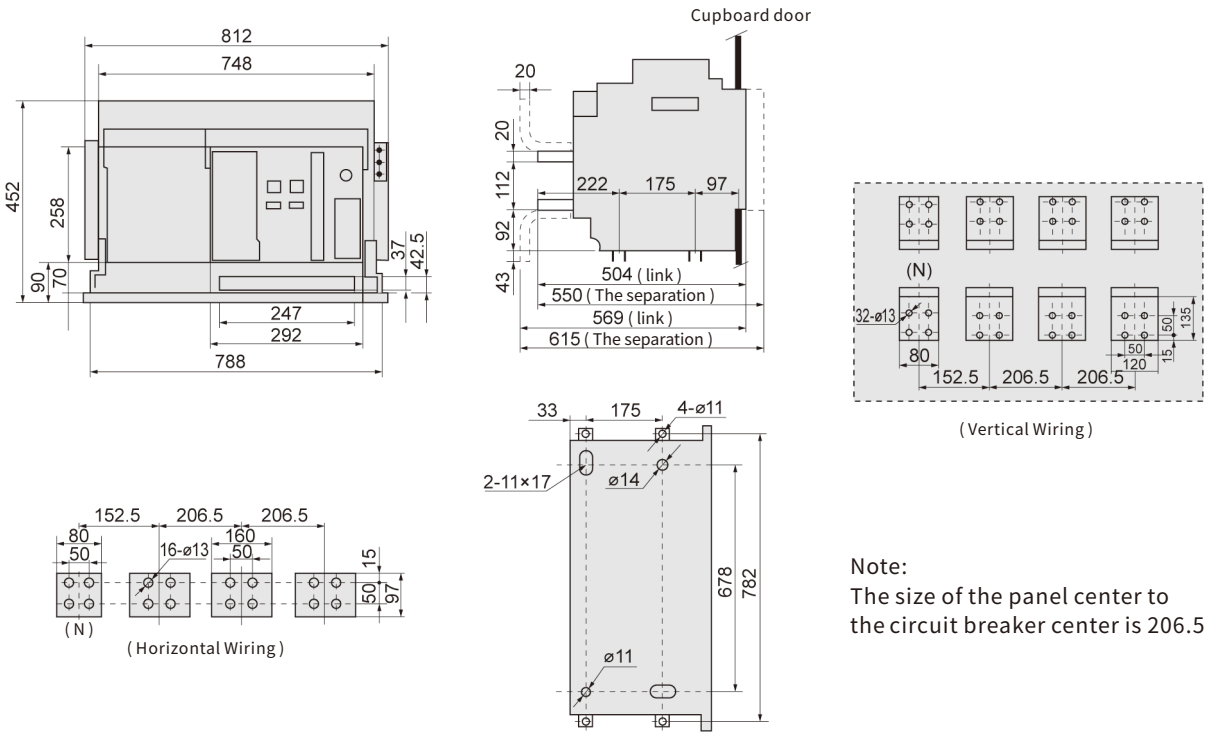
Fig.13 Outline and installation dimensions of drawout type circuit breaker (EKA1-3200, 3200/4)

Overall and Mounting Dimensions



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

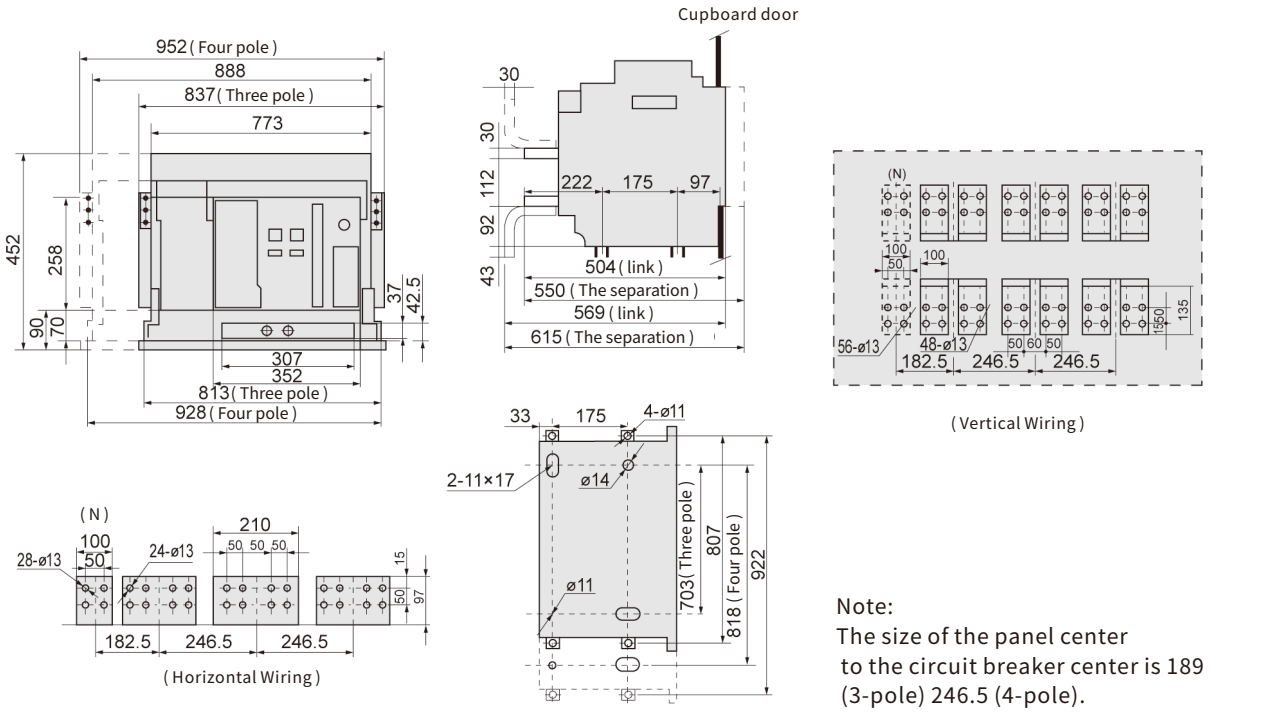
Fig. 14 Outline and installation dimensions of drawout type circuit breaker (EKA1-4000)



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

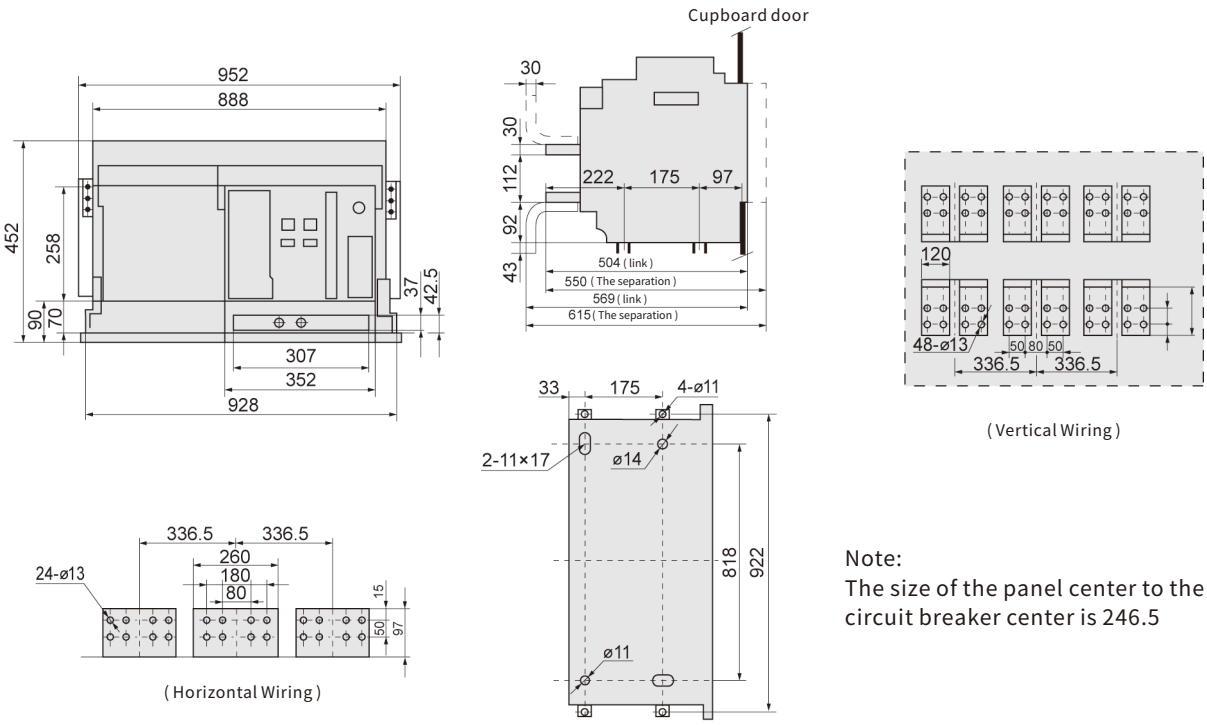
Fig.15 Outline and installation dimensions of drawout type circuit breaker (EKA1-4000/4)

Overall and Mounting Dimensions



Note:
The size of the panel center to the circuit breaker center is 189 (3-pole) 246.5 (4-pole).

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

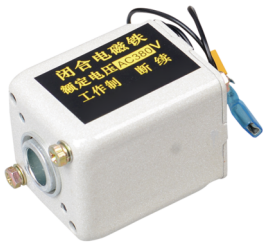


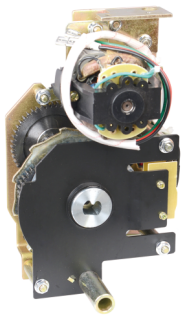
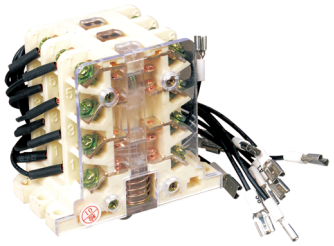
Note:
The size of the panel center to the circuit breaker center is 246.5

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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