

EKM8T MCCB 125AF~1250AF



Thermo-Magnetic Double Adjustable Type MCCB

Standard_ IEC60947-2

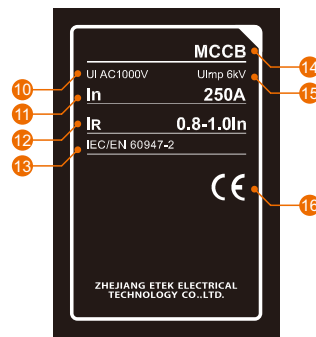
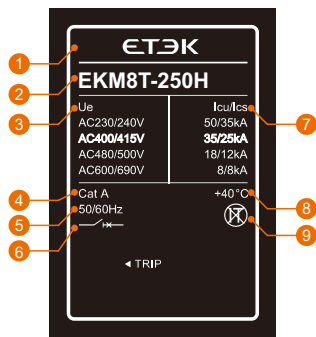


Product Overview

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

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

Nameplate Interpretation



- 1 Company LOGO
- 2 Product model
- 3 U_e : Rated operational voltage
- 4 CatA: Utilization category of breaker
- 5 Frequency of A.C.
- 6 Electrical symbol for circuit breaker with isolating function
- 7 I_{cu}/I_{cs} : Ultimate short circuit breaking capacity/Service short circuit breaking capacity
- 8 +40°C: Ambient temperature
- 9 Not applicable to IT systems
- 10 U_i : Rated insulation voltage
- 11 I_n : Rated operational current
- 12 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 U_{imp} : Rated impulsive withstand voltage
- 16 CE certification

Comparison Table of Frame Sizes and Rated Current

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

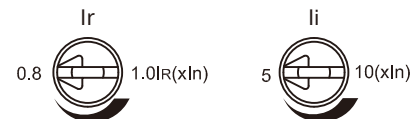
Comparison Table of Frame size, Number of Poles and Breaking Capacity

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

Thermal and Magnetic

Protection

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



Overload protection: thermal protection Ir (Adjustable)

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

Thermal adjustable range: 0.8~1.0In

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

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

Short circuit protection: magnetic protection li (Adjustable)

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

Magnetic adjustable range: 5~10In

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

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

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	630: 320,350,400,500, 630A
		Z3Q: Plug-in front connection (one-piece)			800: 630,700,800A
		Z3H: Plug-in rear connection (one-piece)			1250: 630,700,800, 1000,1250A
	D: There is over-current protection at pole N and the N pole is always connected.	DF: Draw-out type front connection			
		DR: Draw-out type rear connection			

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

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

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

④ Terminal cover is only available for 3P;

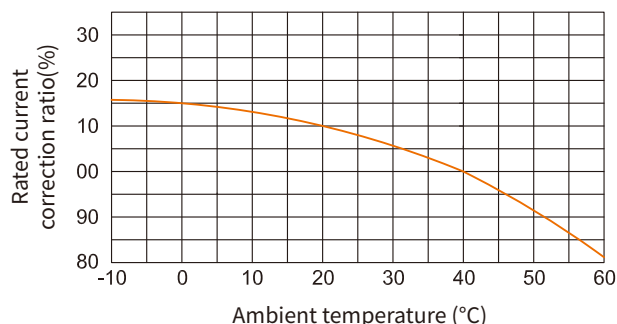
400 and 630 are divided into narrow and long models, and wide and long models, and the default is wide and long models.

Technical Parameters

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

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

Current-Temperature Characteristics



Derating of Temperature

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

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

Derating of Altitude

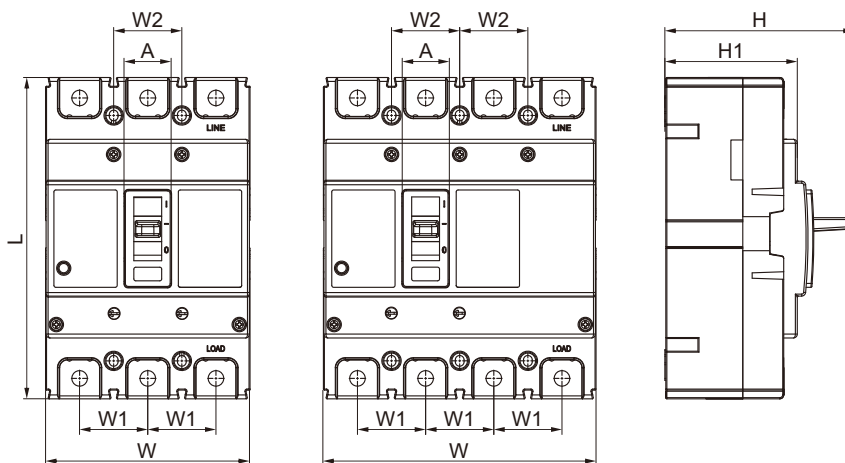
Altitude (m)	2000	2500	3000	4000	4500	5000
Power frequency withstand voltage (V)	2500	2500	2250	1950	1775	1625
Insulation voltage (V)	1000	1000	900	780	710	650
Maximum operationnal voltage (V)	400	400	350	312	284	260
Correction coefficient of operating current (In)	1	1	0.98	0.95	0.92	0.9

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Overall Dimension (mm)



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

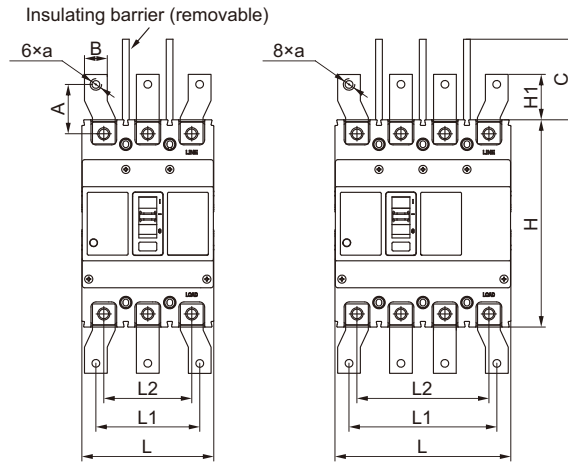
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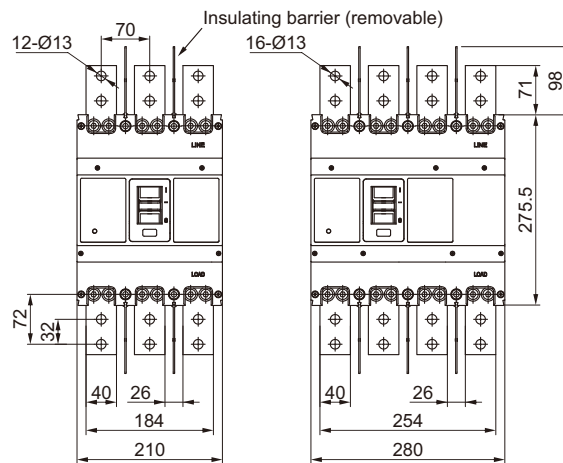
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Front Connection Installation Dimension (mm)



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

EKM8T-1250

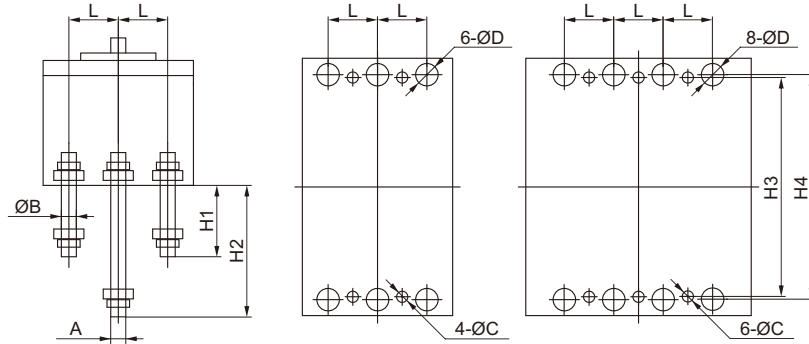


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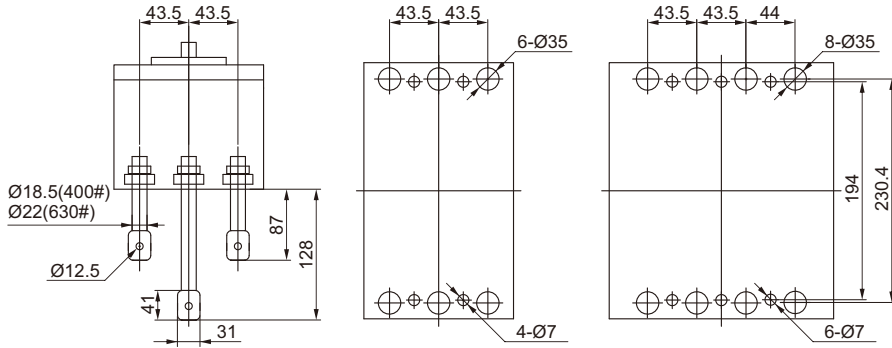
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Rear Connection Installation Dimension (mm)

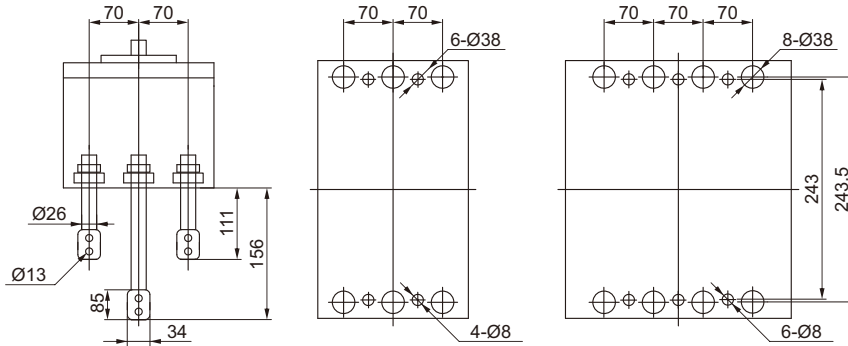


Product type	L	H1	H2	H3	H4	A	B	C	D
EKM8T-125	25	51	81	110	114	8	10	4.5	13
EKM8T-160	30	49	94	132	134	8	12	4.5	15
EKM8T-250	35	82	121	126	144	12	12	4.5	15

EKM8T-400/630

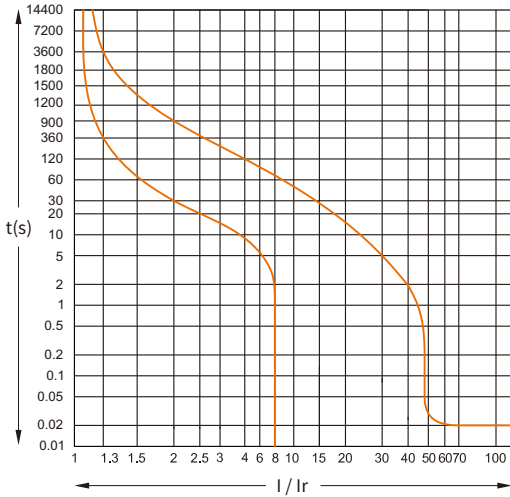


EKM8T-800

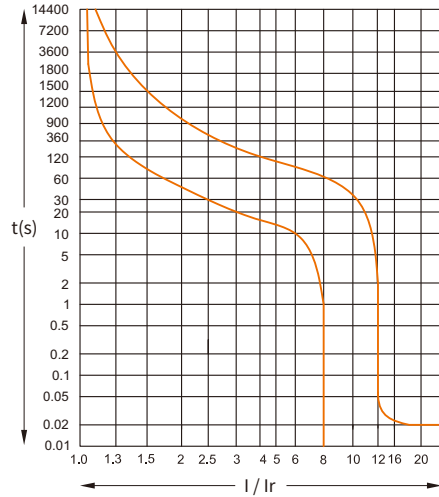


Tripping Characteristic Curve

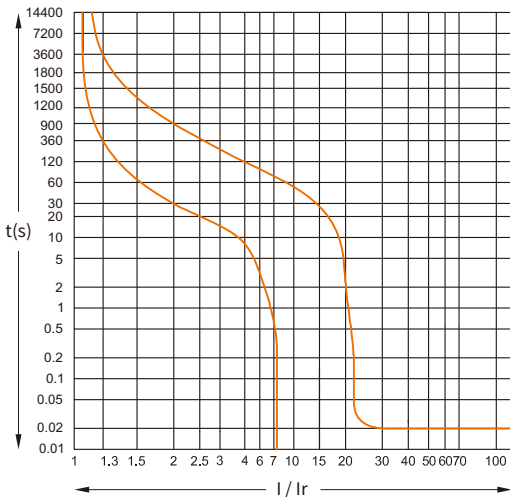
EKM8T-125 (10-50A)



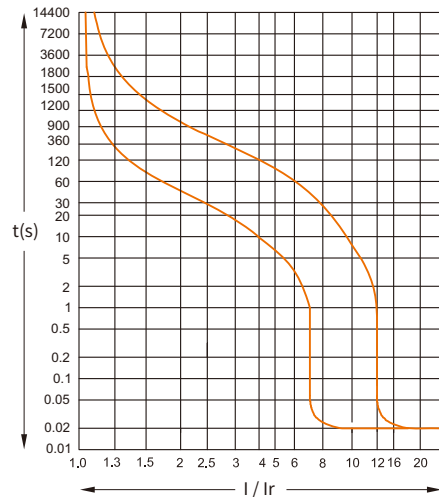
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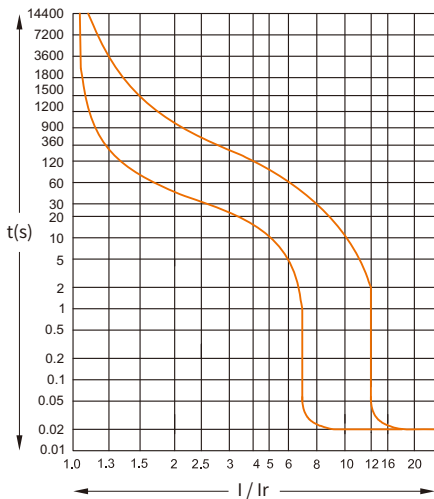
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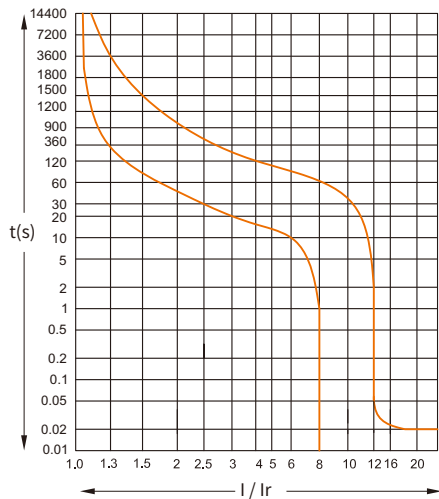
EKM8T-160 (80-160A)



EKM8T-250



EKM8T-400

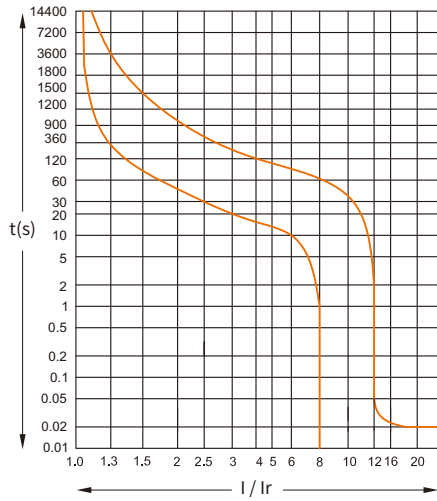


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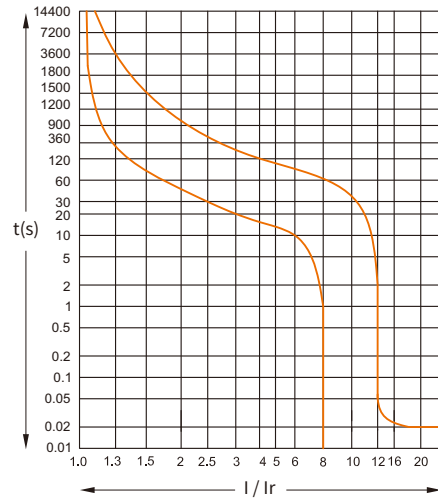


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EKM8T-800



EKM8T-1250

