

INDUSTRIAL POWER DISTRIBUTION ELECTRIC



DZ47-63S 6KA MCB (Economic Type)

Mini Circuit Breaker

ETEK®

Standard_ IEC60898-1



Technical Data

Electrical Features	Rated current I_n	1,2,3,4,5,6,8,10,13,16,20,25,32,40,50,63A
	Poles	1P,1P+N,2P,3P,3P+N,4P
	Rated voltage U_e	240/415V~
	Insulation voltage U_i	500V
	Rated frequency	50/60Hz
	Rated breaking capacity	6,000A
	Energy limiting class	3
	Rated impulse withstand voltage(1.5/50) U_{imp}	4,000V
	Dielectric test voltage at ind. Freq. for 1 min	2kV
	Pollution degree	2
Thermo-magnetic release characteristic	B,C,D	
Mechanical Features	Electrical life	4,000 Cycles
	Mechanical life	10,000 Cycles
	Contact position indicator	Yes
	Protection degree	IP20
	Reference temperature for setting of thermal element	30°C
	Ambient temperature (with daily average $\leq 35^\circ\text{C}$)	-5°C~+40°C
	Storage temperature	-25°C~+70°C
Installation	Terminal connection type	Cable/Pin-type busbar
	Terminal size top/bottom for cable	25mm ² 18-3AWG
	Terminal size top/bottom for busbar	25mm ² 18-3AWG
	Tightening torque	2.5Nm 22In-lbs
	Mounting	On DIN rail EN60715(35mm) by means of fast clip device
	Connection	From top and bottom
Combination with accessories	Auxiliary contact	DZ47-OF
	Alarm contact	DZ47-FB
	Shunt release	DZ47-MX
	Over/Under voltage release	DZ47-MV+MN

DZ47-63S 6KA MCB (Economic Type)

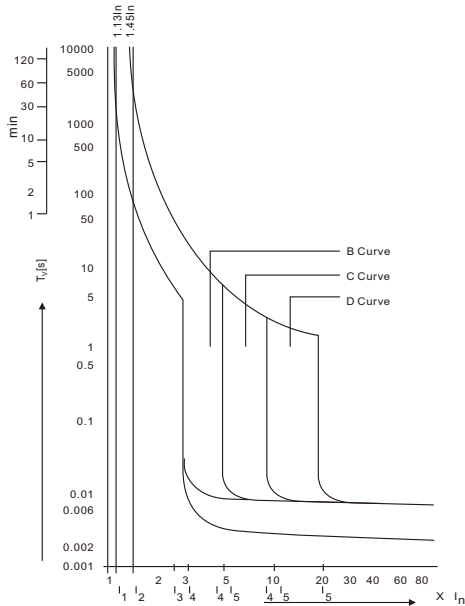
Mini Circuit Breaker



Standard_ IEC60898-1

MCB Characteristics

Characteristics Curves



As per IEC60898	Thermal Tripping		Magnetic Tripping			
	No tripping current	Tripping current I_2	Time Limits t	Hold current I_4	Trip current I_5	Time Limits t
B Curve	$1.13 \times I_N$	$1.45 \times I_N$	$\geq 1h$	$3 \times I_N$	$5 \times I_N$	$\geq 0.1s$
			$< 1h$			$< 0.1s$
C Curve	$1.13 \times I_N$	$1.45 \times I_N$	$\geq 1h$	$5 \times I_N$	$10 \times I_N$	$\geq 0.1s$
			$< 1h$			$< 0.1s$
D Curve	$1.13 \times I_N$	$1.45 \times I_N$	$\geq 1h$	$10 \times I_N$	$20 \times I_N$	$\geq 0.1s$
			$< 1h$			$< 0.1s$

Tripping characteristics

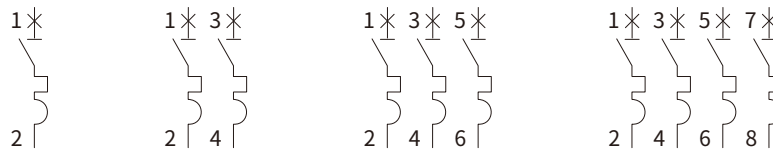
Based on the Tripping Characteristics, MCB are available in “B”, “C” and “D” curve to suit different types of applications.

“B” Curve for protection of electrical circuits with equipment that does not cause surge current (lighting and distribution circuits) Short circuit release is set to (3-5)In.

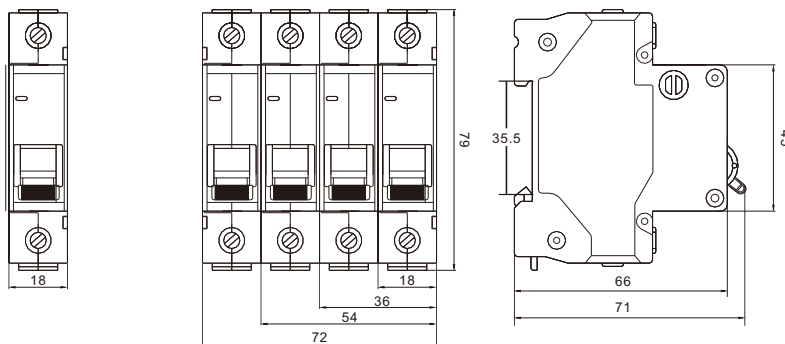
“C” Curve for protection of electrical circuits with equipment that cause surge current (inductive loads and motor circuits) Short circuit release is set to (5-10)In.

“D” Curve for protection of electrical circuits with cause high inrush current, typically 12-15 times the thermal rated current (transformes, x-ray machines etc,) Short circuit release is set to (10-20)In.

Circuit Diagram



Overall and Installation Dimension(mm)



EKM1-63S 6KA MCB

Mini Circuit Breaker

ETEK®

Standard_ IEC60898-1

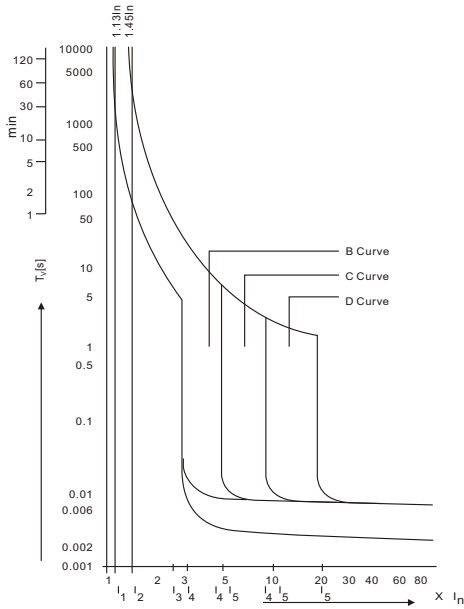


Technical Data

Electrical Features	Rated current I_n	1,2,3,4,5,6,8,10,13,16,20,25,32,40,50,63A
	Poles	1P, 1P+N, 2P, 3P, 3P+N, 4P
	Rated voltage U_e	240/415V~
	Insulation voltage U_i	500V
	Rated frequency	50/60Hz
	Rated breaking capacity	6,000A
	Energy limiting class	3
	Rated impulse withstand voltage(1.5/50) U_{imp}	4,000V
	Dielectric test voltage at ind. Freq. for 1 min	2kV
	Pollution degree	2
Thermo-magnetic release characteristic	B,C,D	
Mechanical Features	Electrical life	4,000 Cycles
	Mechanical life	10,000 Cycles
	Contact position indicator	Yes
	Protection degree	IP20
	Reference temperature for setting of thermal element	30°C
	Ambient temperature (with daily average $\leq 35^\circ\text{C}$)	-5°C~+40°C
Storage temperature	-25°C~+70°C	
Installation	Terminal connection type	Cable/Pin-type busbar
	Terminal size top/bottom for cable	25mm ² 18-3AWG
	Terminal size top/bottom for busbar	25mm ² 18-3AWG
	Tightening torque	2.5Nm 22In-lbs
	Mounting	On DIN rail EN60715(35mm) by means of fast clip device
	Connection	From top and bottom
Combination with accessories	Auxiliary contact	EKM1S-OF
	Alarm contact	EKM1S-FB
	Shunt release	EKM1S-MX
	Over/Under voltage release	EKM1S-MV+MN

MCB Characteristics

Characteristics Curves



As per IEC60898	Thermal Tripping		Magnetic Tripping			
	No tripping current	Tripping current I_2	Time Limits t	Hold current I_4	Trip current I_5	Time Limits t
B Curve	$1.13 \times I_N$	$1.45 \times I_N$	$\geq 1h$	$3 \times I_N$	$5 \times I_N$	$\geq 0.1s$
			$< 1h$			$< 0.1s$
C Curve	$1.13 \times I_N$	$1.45 \times I_N$	$\geq 1h$	$5 \times I_N$	$10 \times I_N$	$\geq 0.1s$
			$< 1h$			$< 0.1s$
D Curve	$1.13 \times I_N$	$1.45 \times I_N$	$\geq 1h$	$10 \times I_N$	$20 \times I_N$	$\geq 0.1s$
			$< 1h$			$< 0.1s$

Tripping characteristics

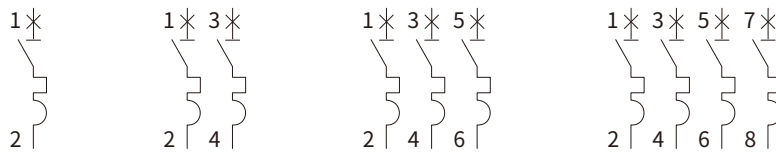
Based on the Tripping Characteristics, MCB are available in “B”, “C” and “D” curve to suit different types of applications.

“B” Curve for protection of electrical circuits with equipment that does not cause surge current (lighting and distribution circuits) Short circuit release is set to (3-5) I_N .

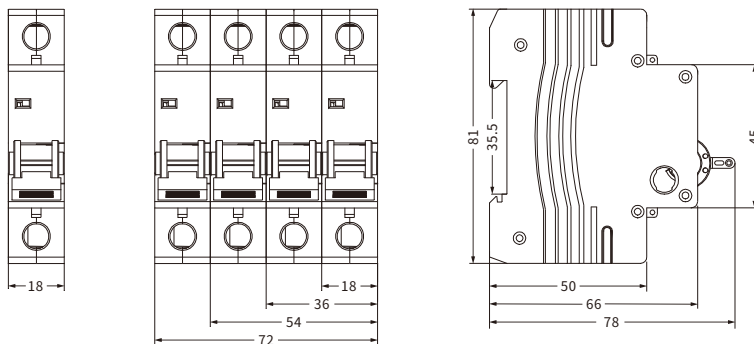
“C” Curve for protection of electrical circuits with equipment that cause surge current (inductive loads and motor circuits) Short circuit release is set to (5-10) I_N .

“D” Curve for protection of electrical circuits with cause high inrush current, typically 12-15 times the thermal rated current (transformes, x-ray machines etc,) Short circuit release is set to (10-20) I_N .

Circuit Diagram



Overall and Installation Dimension (mm)



EKM2-125H 10KA MCB

Mini Circuit Breaker

ETEK®

Standard_ IEC60947-2



Technical Data

Electrical Features	Rated current I_n	63,80,100,125A
	Poles	1P,1P+N,2P,3P,3P+N,4P
	Rated voltage U_e	240/415V~
	Insulation voltage U_i	500V
	Rated frequency	50/60Hz
	Rated breaking capacity	10,000A
	Energy limiting class	3
	Rated impulse withstand voltage(1.5/50) U_{imp}	4,000V
	Dielectric test voltage at ind. Freq. for 1 min	2kV
Pollution degree	2	
Thermo-magnetic release characteristic	8-12In	
Mechanical Features	Electrical life	4,000 Cycles
	Mechanical life	10,000 Cycles
	Contact position indicator	Yes
	Protection degree	IP20
	Reference temperature for setting of thermal element	30°C
	Ambient temperature (with daily average $\leq 35^\circ\text{C}$)	-5°C~+40°C
	Storage temperature	-25°C~+70°C
Installation	Terminal connection type	Cable/Pin-type busbar
	Terminal size top/bottom for cable	50mm ² 18-2AWG
	Terminal size top/bottom for busbar	50mm ² 18-2AWG
	Tightening torque	3.5Nm 30In-lbs
	Mounting	On DIN rail EN60715(35mm) by means of fast clip device
	Connection	From top and bottom
Combination with accessories	Auxiliary contact	EKM2-OF
	Alarm contact	EKM2-FB
	Shunt release	EKM2-MX
	Over/Under voltage release	EKM2-MV+MN

EKM2-125H 10KA MCB

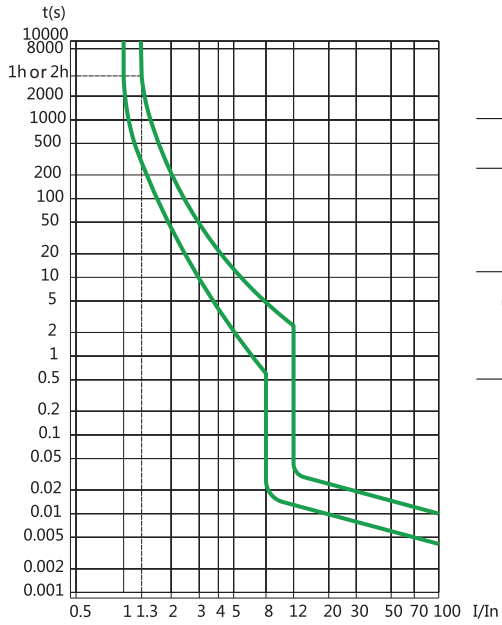
Mini Circuit Breaker



Standard_ IEC60947-2

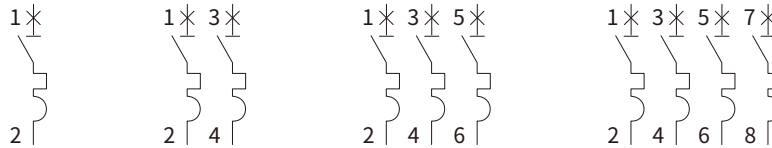
MCB Characteristics

Characteristics
Curves

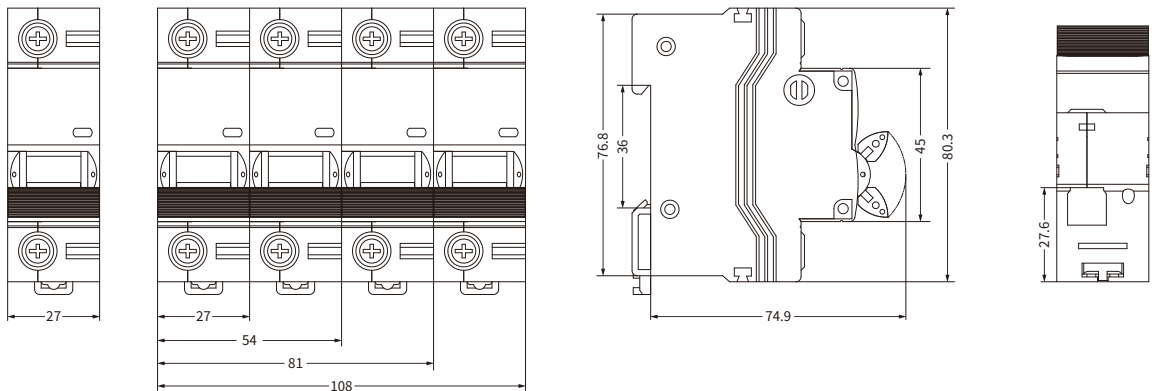


As per IEC60947	Thermal Tripping			Magnetic Tripping		
	No tripping current	Tripping current I_2	Time Limits t	Hold current I_4	Trip current I_5	Time Limits t
63-125A	$1.05 \times I_N$	$1.30 \times I_N$	$\geq 2h$ $< 1h$	$8 \times I_N$	$12 \times I_N$	$\geq 0.2s$ $< 0.2s$

Circuit
Diagram



Overall and Installation Dimension(mm)



EKL1-63H 10KA RCCB


Residual Current Circuit Breaker

ETEK[®]

Standard_ IEC61008-1



Technical Data

Electrical Features	Mode	Electromagnetic
	Type	AC,A,G,S
	Rated current In	16,25,32,40,63A
	Poles	2P(1P+N),4P(3P+N)
	Rated voltage Ue	2P 240V~
		4P 415V~
	Insulation voltage Ui	500V
	Rated frequency	50/60Hz
	Rated residual operation current(I Δ n)	10,30,100,300mA
	Rated residual making and breaking capacity (I Δ m)	500(In=16-40A) 630(In=63A)
	Short-circuit current Inc=I Δ c	EKL1-63H 10,000A
	SCPD fuse	EKL1-63H  10000
	Break time under I Δ n	≤0.1s
	Rated impulse withstand voltage(1.5/50) Uimp	4000V
	Dielectric test voltage at ind.Freq. for 1min	2.5kV
	Electrical life	2,000 Cycles
Mechanical life	4,000 Cycles	

Installation	Contact position indicator	Yes
	Protection degree	IP20
	Ambient temperature(with daily average≤35°C)	-5°C~+40°C
	Storage temperature	-25°C~+70°C
	Terminal connection type	Cable/Pin-type busbar/U-type busbar
	Terminal size top/bottom for cable	25mm ² 18-3AWG
	Terminal size top/bottom for busbar	25mm ² 18-3AWG
	Tightening torque	2.5Nm 22In-lbs
	Mounting	On DIN rail EN60715(35mm) by means of fast clip device
Connection	From top and bottom	



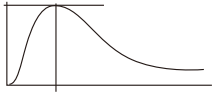
EKL1-63H 10KA RCCB

Residual Current Circuit Breaker

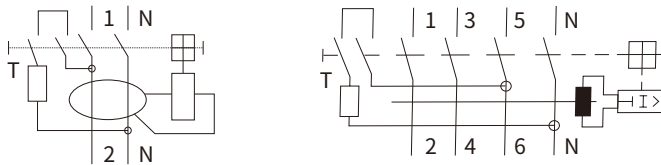


Standard_ IEC61008-1

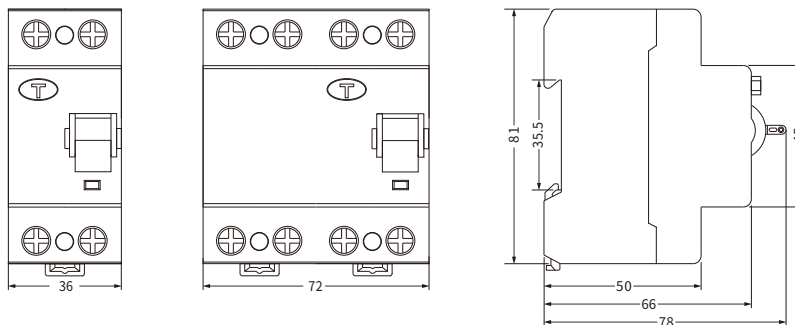
Tripping Current Range	Type	Tripping current I_{Δ}/A		
	A	AC	$0.5I_{\Delta n} < I_{\Delta} < I_{\Delta n}$	
		Lagging Angle	$I_{\Delta n} > 0.01A$	$I_{\Delta n} \leq 0.01A$
0°		$0.35I_{\Delta n} \leq I_{\Delta} \leq 1.4I_{\Delta n}$	$0.35I_{\Delta n} \leq I_{\Delta} \leq 2I_{\Delta n}$	
90°		$0.25I_{\Delta n} \leq I_{\Delta} \leq 1.4I_{\Delta n}$	$0.25I_{\Delta n} \leq I_{\Delta} \leq 2I_{\Delta n}$	
	135°	$0.11I_{\Delta n} \leq I_{\Delta} \leq 1.4I_{\Delta n}$	$0.11I_{\Delta n} \leq I_{\Delta} \leq 2I_{\Delta n}$	

Alternative Current Sensitive	Pulsating direct current sensitive	Surge current proof
 <p>They react to AC current which, whether suddenly applied or slowly arising.</p>	 <p>They react to AC and pulsating DC fault current which reach 0 or almost 0 within one time period of the mains frequency.</p>	 <p>RCCB' s surge capacity. Not tripping at standardized 8/20 us surge-current waves acc.to VDE 0432 Part 2 with surge current values of up to 250A.</p>

Circuit Diagram



Overall and Installation Dimension(mm)



EKMS2 MPCB

Motor Protection Circuit Breaker



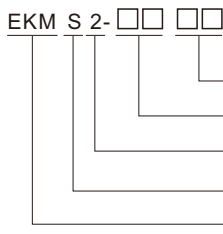
Standard_ IEC60947-2



Technical Data

Description	Electric value	AC690V, 32A, 80A
	Standard	IEC/EN 60947-2, IEC60947-4-1

Type Designation



- Code of Rated current
- Frame size rated current (A)
- Design sequence Number
- AC motor starter
- Company code

Operating Condition

Temperature:	-5°C~+40°C, average temperature in 24 hours not exceed +35°C
Altitude	not exceed 2000m
Air conditions	At mounting site, relative humidity not exceed 50% at the max temperature of +40°C, higher relative humidity is allowable under lower temperature, for example, RH could be 90% at +20°C
Pollution grade	Grade III
Release grade	10A(EKMS2-32) 10A(EKMS2-80)
Rated operational system	Continuous operational system
Mounting conditions	The inclination between the mounting plane and the vertical plane shall not exceed 5° The product shall be installed and operated at a place without obvious shake, Impact and vibration

Protection Property

Over-load Protection Properties						
Series No.	Multiple of setting current	Initial status	Time		Expected results	Ambient temperature
1	1.05	Cold status	$t \geq 2h$		Non-tripping	+20°C±2°C
2	1.20	Heat status (right after test.1)	$t < 2min$		Tripping	+20°C±2°C
3	1.50	Heat status (right after test.1)	Tripping class	10A $t < 2min$	Tripping	+20°C±2°C
				10 $t < 4min$		
4	7.20	Cold status	Tripping class	10A $2s < t \leq 10s$	Tripping	+20°C±2°C
				10 $4s < t \leq 10s$		

Protection Property

Phase failure protection properties						
Series No.	Multiple of setting current		Initial status	Time	Expected results	Ambient temperature
	Any 2 phase	The other phase				
1	1.0	0.9	Cold status	$t \geq 2h$	Non-tripping	+20°C±2°C
2	1.15	0	Heat status (right after test.1)	$t < 2h$	Tripping	+20°C±2°C

Temperature compensation properties

Protection Property

Series No.	Multiple of setting current	Initial status	Time	Expected results	Ambient temperature
1	1.0	Cold status	$t \geq 2h$	Non-tripping	$+40^{\circ}C \pm 2^{\circ}C$
2	1.2	Heat status (right after test.1)	$t < 2min$	Tripping	$+40^{\circ}C \pm 2^{\circ}C$
3	1.05	Cold status	$t \geq 2h$	Non-tripping	$-5^{\circ}C \pm 2^{\circ}C$
4	1.3	Heat status (right after test.1)	$t < 2min$	Tripping	$-5^{\circ}C \pm 2^{\circ}C$

Model of overload relay	Code	Rated current(A)	Rated ultimate short-circuit breaking capacity lcu(kA)			Rated service short-circuit breaking capacity lcs(kA)			Standard rated power of three-phase motor (kW)		
			230/240V	400/415V	660/690V	230/240V	400/415V	660/690V	230/240V	400/415V	660/690V
EKMS2-32	3201	0.1~0.16	100	100	100	100	100	100	-	-	-
	3202	0.16~0.25	100	100	100	100	100	100	-	-	-
	3203	0.25~0.4	100	100	100	100	100	100	-	-	-
	3204	0.4~0.63	100	100	100	100	100	100	-	-	0.37
	3205	0.63~1	100	100	100	100	100	100	-	-	0.55
	3206	1~1.6	100	100	100	100	100	100	-	-	1.1
	3207	1.6~2.5	100	100	3	100	100	2.25	0.37	0.75	1.5
	3208	2.5~4	100	100	3	100	100	2.25	0.75	1.5	3
	3210	4~6.3	100	100	3	100	100	2.25	1.1	2.2	4
	3214	6~10	100	100	3	100	100	2.25	2.2	4	7.5
	3216	9~14	100	15	3	100	7.5	2.25	3	5.5	9
	3220	13~18	100	15	3	100	7.5	2.25	4	9	11
	3221	17~23	50	15	3	50	6	2.25	5.5	11	15
	3222	20~25	50	15	3	50	6	2.25	5.5	11	18.5
3232	24~32	50	15	3	50	6	2.25	7.5	12.5	22	
EKMS2-80	8025	16~25	-	15	-	-	7.5	-	5.5	11	-
	8040	25~40	-	15	-	-	7.5	-	11	22	-
	8063	40~63	-	15	-	-	7.5	-	15	33	-
	8080	56~80	-	15	-	-	7.5	-	22	45	-

Accessories

Under-Voltage Release



Rated insulation voltage Ui(V)	Voltage range of operation	Model	Specification
690	35%~70%Ue	EKMS2-UV110	110~115V 50Hz
690	35%~70%Ue	EKMS2-UV127	127V 60Hz
690	35%~70%Ue	EKMS2-UV220	220~240V 50Hz
690	35%~70%Ue	EKMS2-UV380	380~400V 50Hz
690	35%~70%Ue	EKMS2-UV440	440V 60Hz

Shunt Release



Rated insulation voltage Ui(V)	Voltage range of operation	Model	Specification
690	70%~110%Ue	EKMS2-SH110	110~115V 50Hz
690	70%~110%Ue	EKMS2-SH127	127V 60Hz
690	70%~110%Ue	EKMS2-SH220	220~240V 50Hz
690	70%~110%Ue	EKMS2-SH380	380~400V 50Hz
690	70%~110%Ue	EKMS2-SH440	440V 60Hz

Instantaneous auxiliary contact



Rated insulation voltage Ui(V)	Conventional heating current Ith(A)	Model	Configuration
250	2.5	EKMS2-AE20	2N/O
250	2.5	EKMS2-AE11	1N/O+1N/C



Rated insulation voltage U_i (V)	Conventional heating current I_{th} (A)	Model	Configuration	Starter matched
690	6	EKMS2-AN20	2N/O	EKMS2-32
690	6	EKMS2-AN11	1N/O+1N/C	
690	6	EKMS2-AU20	2N/O	EKMS2-80
690	6	EKMS2-AU11	1N/O+1N/C	

Fault signal contact and instantaneous auxiliary contact



Rated insulation voltage U_i (V)	Conventional heating current I_{th} (A)		Model	Configuration
	Instantaneous auxiliary contact	Fault signal contact		
690	6	2.5	EKMS2-FA0110	1N/C+1N/O
690	6	2.5	EKMS2-FA0101	1N/C+1N/C
690	6	2.5	EKMS2-FA1010	1N/O+1N/O
690	6	2.5	EKMS2-FA1001	1N/O+1N/C

Application class, rated operational voltage and rated operational current of instantaneous auxiliary contact

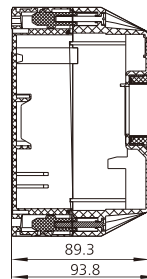
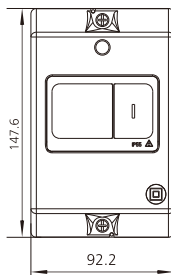
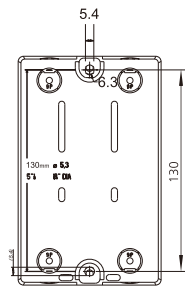
Utilization category	AC-15				DC-13		
	Rated operational voltage U_e (V)	24	48	110/127	230/240	24	48
Rated operational current I_e (A)	2	1.25	1	0.5	1	0.3	0.15
Normal operational power P (W)	48	60	127	120	24	15	9



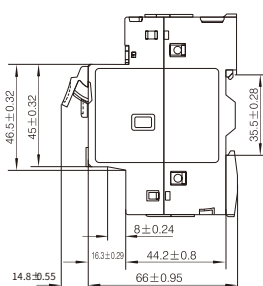
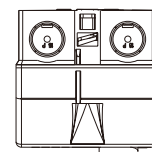
EKMS2-MC Installation box without pushbutton

IP55

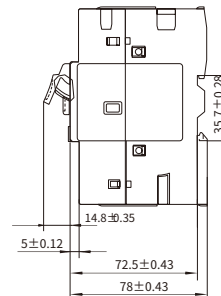
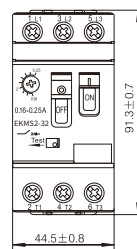
Overall and Mounting Dimension(mm)



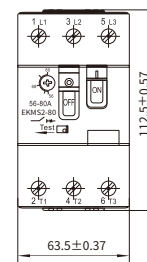
EKMS2-MC



EKMS2-32



EKMS2-80



Automatic Type



Manual Type



Technical Data

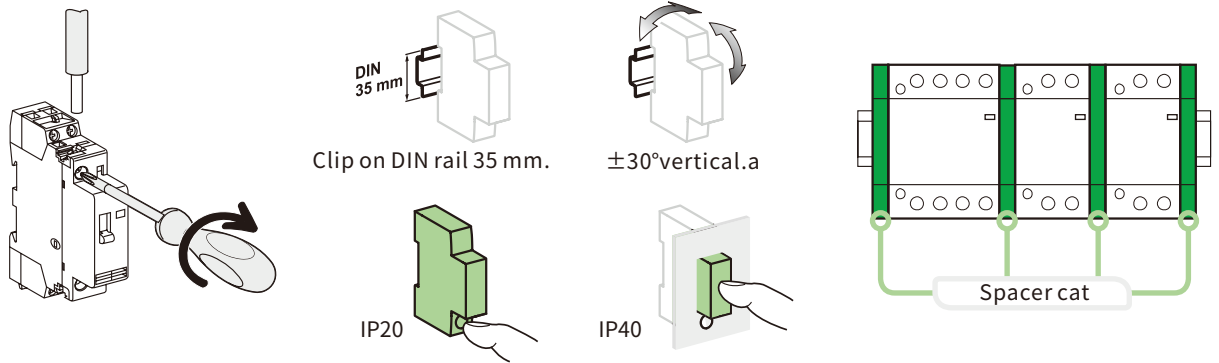
Electrical Features

Voltage rating(Ue)	1P, 2P	250V AC
	3P, 4P	400V AC
Frequency	50/60Hz	
Endurance(O-C)		
Electrical life	100,000	
Maximum number of switching operation a day	100	
Additional characteristics		
Insulation vwlage(Ui)	500V AC	
Pollution degree	2	
Rated impulse withstand voltage(Uimp)	2.5kV(4kV@ 12/24/48VAC)	
Degree of protection (IEC 60529)	IP20 IP40	
Operating temperature	-5°C~+60°C(1)	
Storage temperature	-40°C~+70°C	
Tropicalization(IEC 60068-1)	Treatment 2(relative humidity 95% at 55°C)	
ELSV compliance(Extra Low Safety Voltage)for 12/24/48VAC versions		
The product control conforms to the SELV(safety extra low voltage)requirements		

(1)In the case of contactor mounting in a enclosure for which the interior temperature is in range between 50°Cand 60°C, it is necessary to use a spacer, between each contactor

Connection

Type	Rating	Length tripping	Circuit	Tightening torque	Copper cables	
					Rigid	Flexible or ferrule
EKMF	PZ1:4MM	16-100A	Control	0.8N.m		
		16~25A			1.5~2.5mm ² 2×1.5mm ²	1.5~2.5mm ² 2×2.5mm ²
	PZ2:6MM	40A-63A	Power	3.5N.m	1.5~6mm ²	1~4mm ²
		100A			6~25mm ² 6×3.5mm ²	6~16mm ² 6~35mm ²



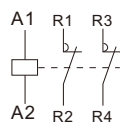
Consumption

EKMF Contactors -50Hz	Rating(In)		Control voltage(VAC)(50/60 Hz)	Consumption		Max. power
	AC-7a	AC-7b		Holding	Inrush	
2P	16A	6A	220...240	2.7VA	9.2VA	1.2W
	20A	7A	220...240	2.7VA	9.2VA	1.2W
	25A	9A	220...240	3.8VA	15VA	1.2W
	40A	18A	220...240	4.6VA	34VA	1.6W
	63A	25A	220...240	4.6VA	34VA	1.6W
	100A	-	220...240	6.5VA	53VA	2.1W
4P	16A	6A	220...240	4.6VA	34VA	1.6W
	25A	9A	220...240	4.6VA	34VA	1.6W
	32A	12A	220...240	6.5VA	53VA	2.1W
	40A	18A	220...240	6.5VA	53VA	2.1W
	63A	25A	220...240	6.5VA	53VA	2.1W
	100A	-	220...240	13VA	106VA	4.2W

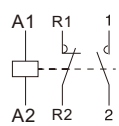
EKMF
Manual
Control
Contactor
-50Hz

	Rating(In)		Control voltage(VAC)(50/60 Hz)	Consumption		Max. power
	AC-7a	AC-7b		Holding	Inrush	
2P	25A	9A	230...240	2.7VA	9.2VA	1.2W
	40A	18A	220...240	4.6VA	34VA	1.6W
	63A	25A	220...240	4.6VA	34VA	1.6W
4P	25A	9A	220...240	4.6VA	34VA	1.6W
	40A	18A	220...240	6.5VA	53VA	2.1W
	63A	25A	220...240	6.5VA	53VA	2.1W

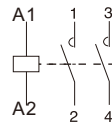
Circuit
Diagram



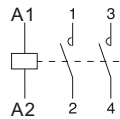
2NC



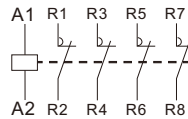
1NC+1NO



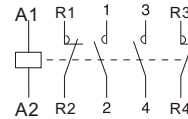
2NO



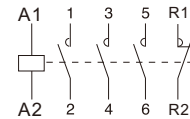
4NO



4NC

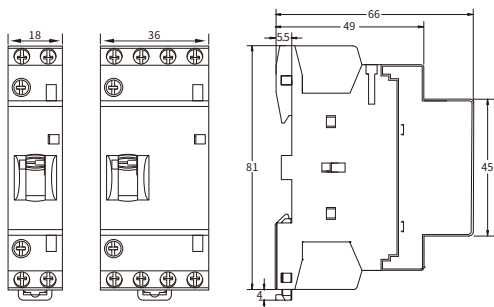


2NO+2NC

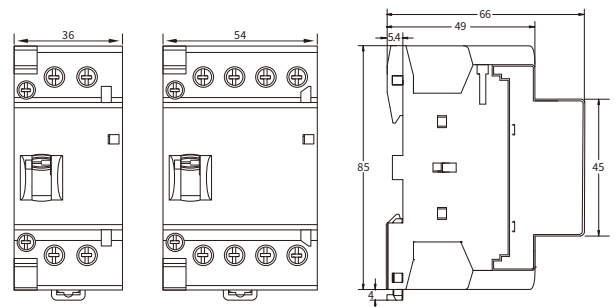


3NO+1NC

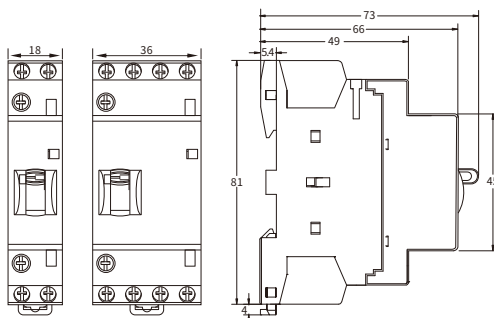
Overall and Installation Dimension(mm)



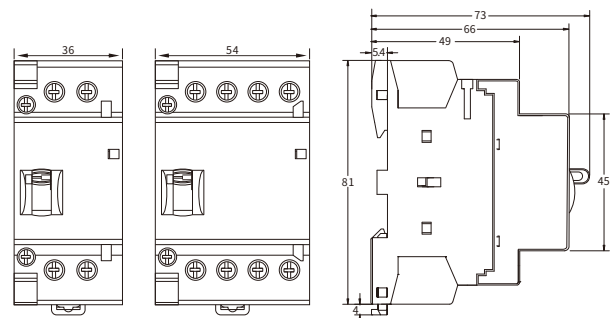
EKMF-16/20/25A



EKMF-32/40/63A



EKMF manual control contactor 16/25A



EKMF manual control contactor 40/63A



Impulse Relays

The impulse relays are used to control, by means of pushbuttons, lighting circuits consisting of:

- Incandescent lamps, low-voltage halogen lamps, etc. (resistive loads)
- Fluorescent lamps, discharge lamps, etc. (inductive loads)

Impulse Relays Are Used

- Closing of the impulse relay pole(s) is triggered by an impulse on the coil.
- Having two stable mechanical positions, the pole(s) will be opened by the next impulse. Each impulse received by the coil reverses the position of the pole(s).
- Can be controlled by an unlimited number of pushbuttons.
- Zero energy consumption.

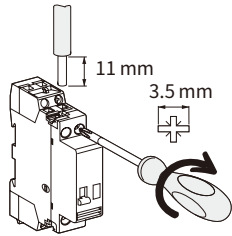
Yellow Clip

- A simple clip-on system for flexible auxiliaries combination and improved robustness
- For electrical and mechanical connections
- Insulated terminals IP20
- Built-in or optional auxiliary function: state indication, centralised control, latched control, control for illuminated pushbutton, step-by-step control, time delay
- Manual controls on front face: direct and priority manual control by O-I toggle
- Mechanical contact position indicator
- Disconnection of remote control by selector switch (except for 4P single-piece EKLR16) for maintenance operation

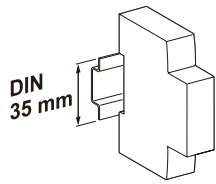
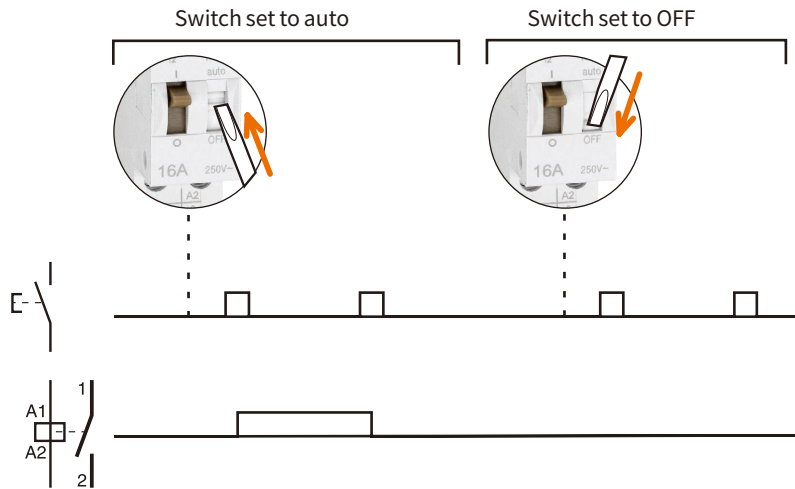
		Choice impulse relays auxiliaries				
Type		Standard EKLR16				
Rating	A	16				
Control voltage	V AC	230/240	130	48	24	45
	V DC	110	48	24	12	6

Connection

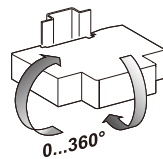
Type	Rating	Circuit	Tightening torque	Copper cables	
				Rigid or ferrule	Flexible or ferrule
EKLR16	16 A	Control	1 N.m	0.5 to 4 mm ²	1 to 4 mm ²
		Power		1.5 to 4 mm ²	1.5 to 4 mm ²



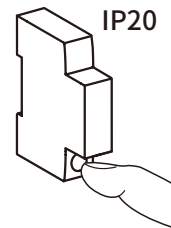
Operation



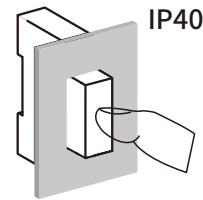
Clip on DIN rail 35 mm.



Indifferent position of installation.



IP20



IP40



Technical Data

Control circuit		
Dissipated power (during the impulse)	1P, 2P	19 VA
Illuminated PB control		Max. current 3 mA (if > use an ATLz)
Operating threshold		Min. 85 % of Un in conformance with IEC/EN60669-2-2
Duration of the control order		50 ms to 1 s (200 ms recommended)
Response time		
Power circuit		
Voltage rating (Ue)	1P, 2P	24 ...250 V AC
Frequency		50 Hz or 60 Hz
Maximum number of operations per minute		5
Maximum number of switching operation a day		100
Additional characteristics to IEC/EN 60947-3		
Insulation voltage (Ui)		440 V AC
Pollution degree		3
Rated impulse withstand voltage (Uimp)		6 kV

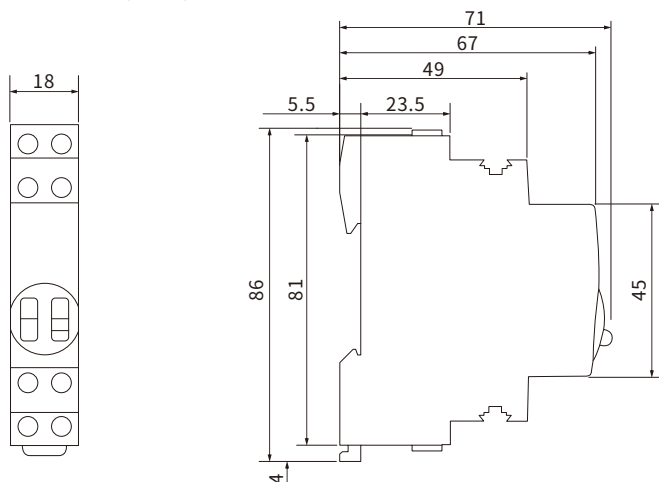
Technical Data

Endurance (O-C)		
Electrical to IEC/EN 60947-3		200,000 cycles (AC21)
		100,000 cycles (AC22)
Overvoltage category		IV
Other characteristics		
Degree of protection (IEC 60529)	Device only	IP20
	Device in modular enclosure	IP40 Insulation class II
Operating temperature		-20°C to +50°C
Storage temperature		-40°C to +70°C
Tropicalization (IEC 60068-1)		Treatment 2 (relative humidity 95 % at 55°C)

Security

Accessories	Yellow clips	Spacer
		
Function		
	Ensure the mechanical and/or electrical link between impulse relays and their auxiliaries	Required to reduce temperature rise of modular devices installed side by side. Recommended to separate electronic devices (thermostat, programmable clock, etc.) from electromechanical devices (relays, contactors).
Specifications		
Width in 9 mm modules	-	1

Overall and Installation Dimension(mm)





EKC2-0911



EKC2-2511



EKC2-3211



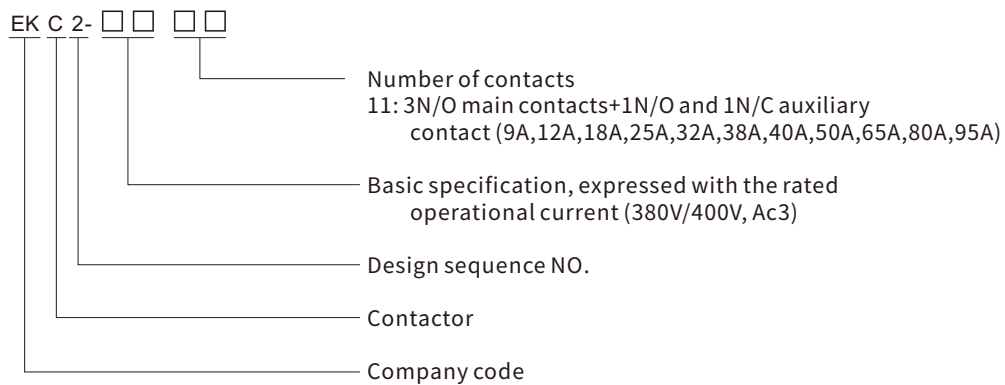
EKC2-5011

Technical Data

Description	Application	Remote making & breaking circuits Protect circuit from over-load when assembling with thermal over-load relay Frequent start-up and control of AC contactor
	Electric value	AC50/60Hz, 690V, up to 95A
	Utilization category	AC-3, AC-4
	Altitude	≤2000m
	Ambient temperature	-5°C~+40°C
	Mounting category	III
	Mounting conditions	Inclination between the mounting plane and the vertical plane should not exceed ±5°
	Standard	IEC/EN 60947-4-1. IEC/EN 60947-5-1.

AC Coil Operation	Volts(VAC)	24	36	42	48	110	127	220	230	240	380	415	440	480	500	600	
	Code	50Hz	B5	C5	D5	E5	F5	G5	M5	P5	U5	Q5	N5	R5	-	S5	Y5
	Code	60Hz	B6	-	D6	E6	F6	G6	M6	-	U6	Q6	-	R6	T6	-	-
		50/60Hz	B7	-	D7	E7	F7	-	M7	P7	-	Q7	N7	R7	-	-	-

Type Designation





EKC2-6511



EKC2-8011



EKC2-9511

Technical Data

Technical Specification

Standard	IEC/EN60947-4-1 IEC/EN60947-5-1						
		EKC2-09	EKC2-12	EKC2-18	EKC2-25	EKC2-32	EKC2-38
Model No.							
Rated Conventional Heating Current	I _{th} (A)	20	20	32	40	50	50
Rated Voltage U _i (V)	U _i (V)	690	690	690	690	690	690
Rated Operation Current U _e =380/415V	AC-3 I _e (A)	9	12	18	25	32	38
	AC-4 I _e (A)	3.5	5	7.7	8.5	12	14
Power Controlled 3ph cage Motor AC-3	220/240V KW	2.2	3	4	5.5	7.5	8.9
	380/415V KW	4	5.5	7.5	11	15	18.5
	660/690V KW	5.5	7.5	10	15	18.5	18.5
Electrical life(x10 ³ operations)	AC-3	1100	1100	1100	1100	900	900
	AC-4	220	220	220	220	220	220
Mechanical life(x10 ⁶ operations)		12	12	12	10	10	10
Matched Fuse	Size	RT16-00	RT16-00	RT16-00	RT16-00	RT16-00	RT16-00
	A	20					
Main circuit		3P					
Auxiliary circuit Cat.:AC-15,U _e =415V I _e =0.95A I _{th} =10A		1NO + 1NC					

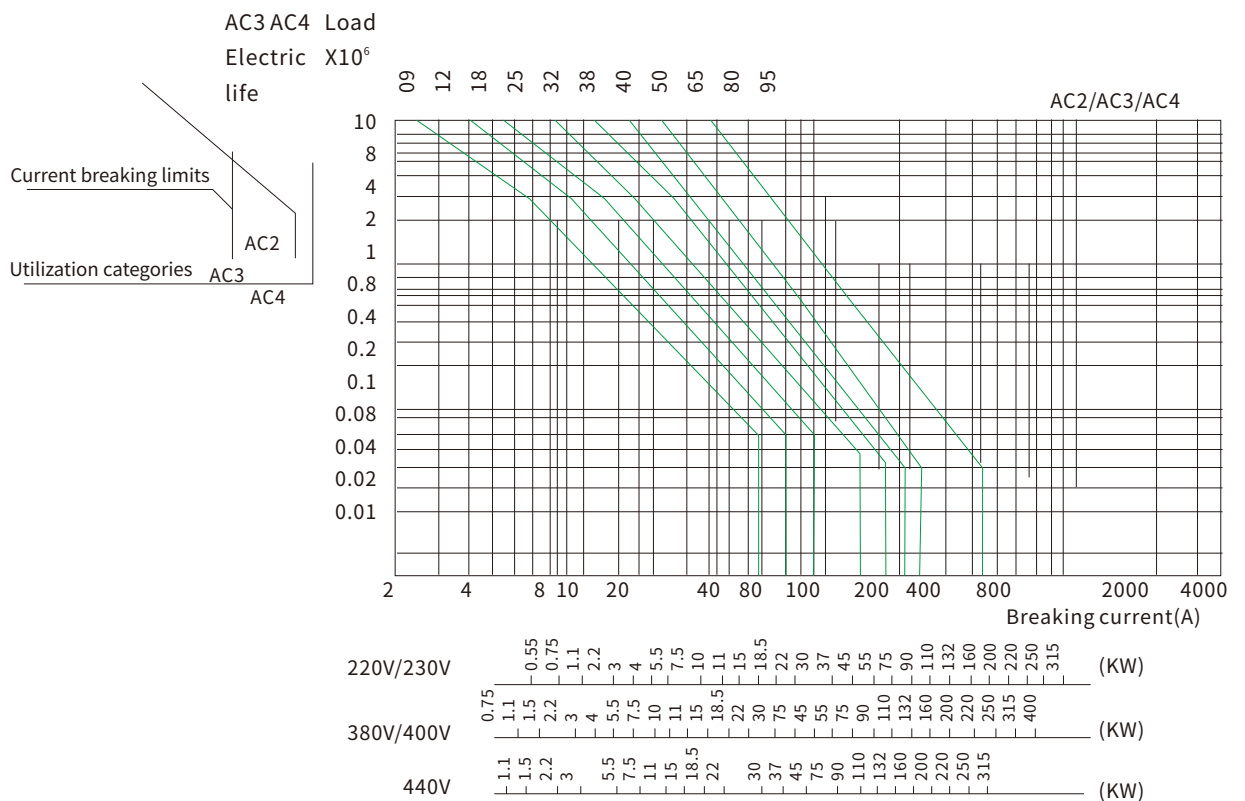
Standard	IEC/EN60947-4-1 IEC/EN60947-5-1						
		EKC2-40	EKC2-50	EKC2-65	EKC2-80	EKC2-95	
Model No.							
Rated Conventional Heating Current	I _{th} (A)	60	80	80	100	125	
Rated Voltage U _i (V)	U _i (V)	690	690	690	690	690	
Rated Operation Current U _e =380/415V	AC-3 I _e (A)	40	50	65	80	95	
	AC-4 I _e (A)	18.5	24	28	37	44	
Power Controlled 3ph cage Motor AC-3	220/240V KW	11	15	18.5	22	25	
	380/415V KW	18.5	22	30	37	45	
	660/690V KW	30	33	37	45	45	
Electrical life(x10 ³ operations)	AC-3	900	900	900	650	650	
	AC-4	170	170	170	110	110	
Mechanical life(x10 ⁶ operations)		9	9	9	6.5	6.5	
Matched Fuse	Size	RT16-00	RT16-00	RT16-00	RT16-00	RT16-00	
	A	63	80	80	100	125	
Main circuit		3P					
Auxiliary circuit Cat.:AC-15,U _e =415V I _e =0.95A I _{th} =10A		1NO + 1NC					

Technical Information

Terminal Connection

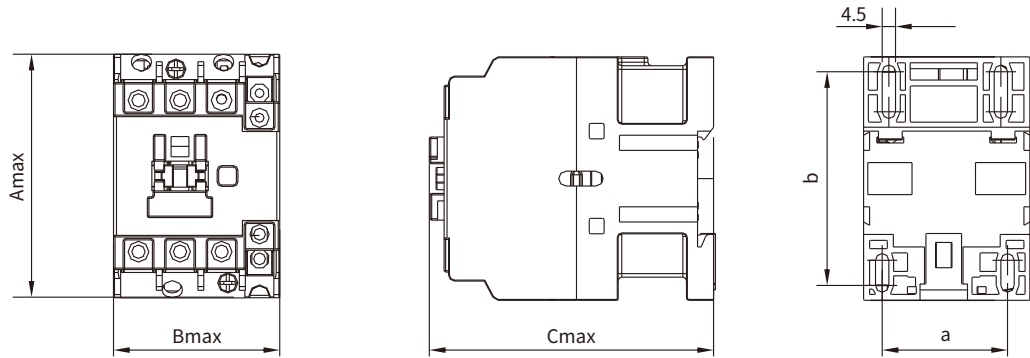
Model	Number of piece	Cabling cross section(Cu)			Screw size	Tightening torque(N.m)
		Flexible cable with cold-pressed socket(mm ²)	Flexible cable without cold-pressed socket(mm ²)	Inflexible cable(mm ²)		
EKC2-09	1~2	2.5	4	4	M3.5	0.8
EKC2-12	1~2	2.5	4	4	M3.5	0.8
EKC2-18	1~2	4	6	6	M3.5	0.8
EKC2-25	1	4	10	6	M4	1.2
	2	4	6	6	M4	1.2
EKC2-32	1	4	10	6	M4	1.2
	2	4	6	6	M4	1.2
EKC2-38	1	4	10	6	M4	1.2
	2	4	6	6	M4	1.2
EKC2-40	1	10	16	10	M4	3.5
	2	10	10	10	M8	3.5
EKC2-50	1	16	25	25	M8	3.5
	2	16	16	-	M8	3.5
EKC2-65	1	16	25	25	M8	3.5
	2	16	16	-	M8	3.5
EKC2-80	1	50	50	50	M8	3.5
	2	25	35	-	M10	4.0
EKC2-95	1	50	50	50	M10	4.0
	2	25	35	-	M10	4.0

Curve

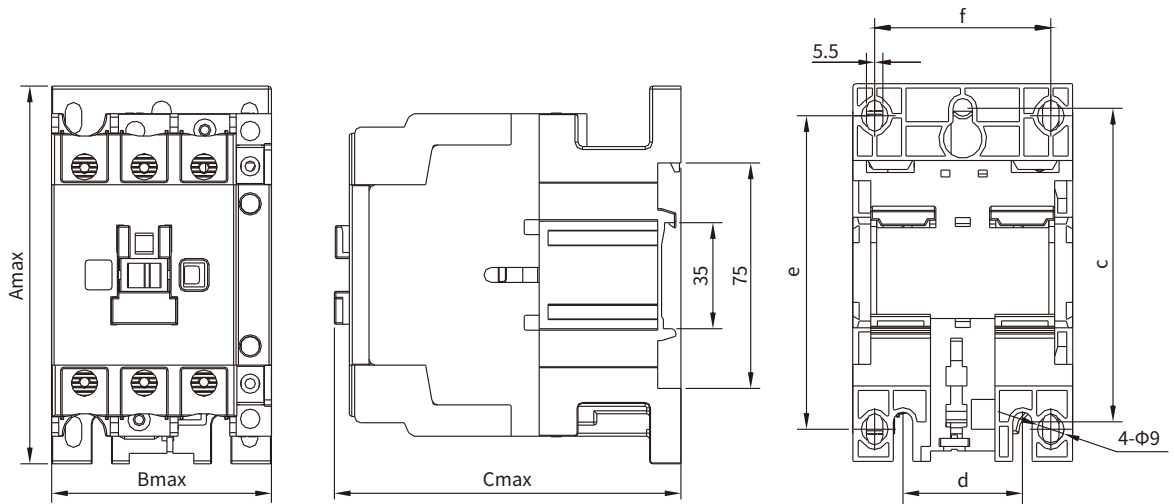


Overall and Mounting Dimension(mm)

EKC2-09~38



EKC2-40~95



Model	A_{max}	B_{max}	C_{max}	a	b	c	d	e	f
EKC2-09,12,18	74.5	45.5	85.5	35	50/60	-	-	-	-
EKC2-25,32,38	83	56.5	97	40	50/70	-	-	-	-
EKC2-40,50,65	127.5	74.5	117	-	-	105	40	100/110	59
EKC2-80,95	127.5	85.5	125.5	-	-	105	40	100/110	67



EKC2-115

EKC2-225

EKC2-330

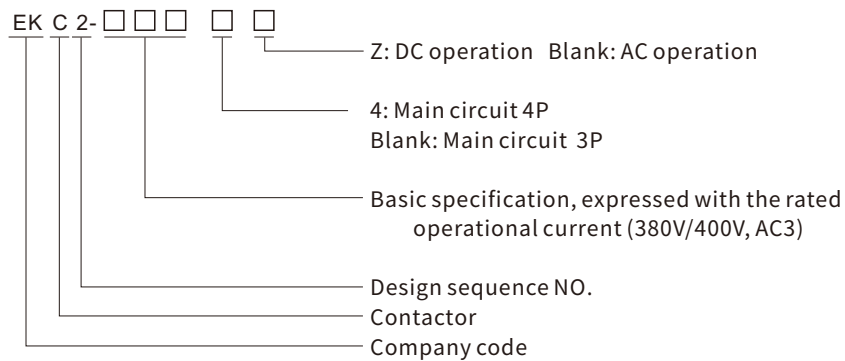
Technical Data

Description	Application	Remote making & breaking circuits Protect circuit from over-load when assembling with thermal over-load relay Frequent start-up and control of AC contactor
	Electric value	AC50/60Hz, 690V, up to 1000A
	Utilization category	AC-3, AC-4
	Altitude	≤2000m
	Ambient temperature	-5°C~+40°C
	Mounting category	III
	Mounting conditions	Inclination between the mounting plane and the vertical plane should not exceed ±5°
	Standard	IEC/EN 60947-4-1

AC Coil Operation	Volts(VAC)	24	36	42	48	110	127	220	230	240	380	415	440	480	500	600
	Code	B5	C5	D5	E5	F5	G5	M5	P5	U5	Q5	N5	R5	-	S5	Y5
	Code	B6	-	D6	E6	F6	G6	M6	-	U6	Q6	-	R6	T6	-	-
Code	B7	-	D7	E7	F7	-	M7	P7	-	Q7	N7	R7	-	-	-	

DC Coil Operation	Volts(VDC)	12	24	36	48	110	220
	Code	JD	BD	CD	ED	FD	MD

Type Designation





EKC2-400



EKC2-500



EKC2-630

Technical Data

Technical Specification

Standard		IEC/EN60947-4-1					
Model No.		EKC2-115	EKC2-150	EKC2-185	EKC2-225	EKC2-265	EKC2-330
Rated Conventional Heating Current	I _{th} (A)	200	200	275	275	315	380
Rated Voltage U _i (V)	U _i (V)	690	690	690	690	690	690
Rated Operation Current U _e =380/415V	AC-3 I _e (A)	115	150	185	225	265	330
	AC-4 I _e (A)	52	60	79	86	105	117
Power Controlled 3ph cage Motor AC-3	380/415V KW	55	75	90	110	132	160
	660/690V KW	80	100	110	129	160	220
Electrical life(x10 ³ operations)	AC-3	600	600	300	300	300	300
	AC-4	100	100	100	100	100	100
Mechanical life(x10 ⁶ operations)		6	6	3	3	3	3
Matched Fuse	Size	RT16-1	RT16-2	RT16-2	RT16-2	RT16-2	RT16-3
	A	200	225	315	315	355	450
Main circuit		3P or 4P					

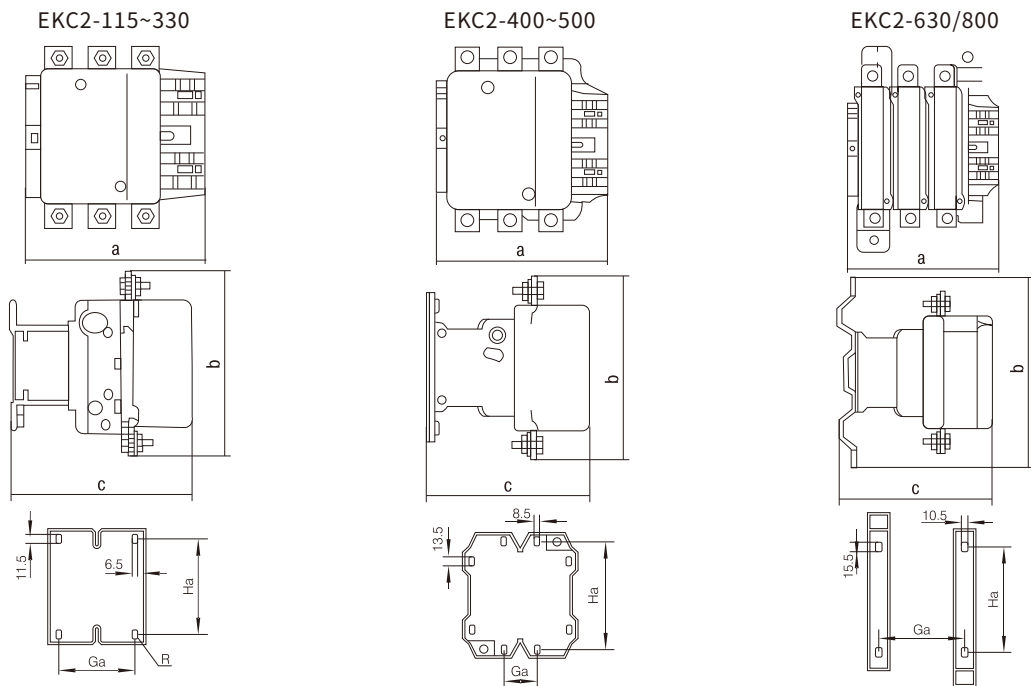
Standard		IEC/EN60947-4-1					
Model No.		EKC2-400	EKC2-500	EKC2-630	EKC2-780	EKC2-800	EKC2-1000
Rated Conventional Heating Current	I _{th} (A)	460	580	850	1200	850	1200
Rated Voltage U _i (V)	U _i (V)	690	690	690	690	690	690
Rated Operation Current U _e =380/415V	AC-3 I _e (A)	400	500	630	780	800	1000
	AC-4 I _e (A)	138	147	188	240	195	320
Power Controlled 3ph cage Motor AC-3	380/415V KW	200	250	335	400	400	500
	660/690V KW	280	335	450	475	475	560
Electrical life(x10 ³ operations)	AC-3	300	300	300	200	200	200
	AC-4	100	100	100	50	50	50
Mechanical life(x10 ⁶ operations)		3	3	3	2	3	2
Matched Fuse	Size	RT16-3	RT16-4	RT16-4	RT16-4	RT16-4	RT16-4
	A	500	630	800	1250	800	1250
Main circuit		3P or 4P					

Technical Data

Terminal
Connection

Model	Cabling cross section(Cu)		Screw size	Tightening torque(N.m)
	Number of piece	Cable Cross section(mm) ²		
EKC2-115	1	70~90	M6	3
EKC2-150	1	70~90	M8	6
EKC2-185	1	95~150	M8	6
EKC2-225	1	95~150	M10	10
EKC2-265	1	120~185	M10	10
EKC2-330	1	185~240	M10	10
EKC2-400	1(2)	240(150)	30×5	10
EKC2-500	2	150~185	40×5	10
EKC2-630	2	185~240	50×5	14
EKC2-800	2	185~240	50×5	14

Overall and Mounting Dimension(mm)



Model	A Max	B Max	C Max
EKC2-115	163.5	162	171
EKC2-150	163.5	170	171
EKC2-185	168.5	174	181
EKC2-225	168.5	197	181
EKC2-265	201.5	203	213
EKC2-330	213	206	219
EKC2-400	213	206	219
EKC2-500	233	238	232
EKC2-630/800	309	304	255



EKCC-12



EKCC-20



EKCC-60

Technical Data

Description	Electric value	AC50/60Hz, up to 690V;
	Ambient temperature	-5°C~+40°C; the average during 24 hours should not exceed +35°C
	Altitude	≤2000m;
	Atmosphere conditions	At mounting site,relative humidity not exceed 50% at the max temperature of +40°C, higher relative humidity is allowable under lower temperature. For example,RH could be 90% at +20°C,special measures should be taken to occurrence of dews;
	Pollution degree	3
	Installation category	III
	Installation conditions	The inclination between installation plane and vertical plane is within ±5°
	Impact and shake	The products should locate in the places where there are no obvious impact and shake

Type Designation

EK CC □ □ □ □

Number of auxiliary contacts
 11: 1N/O+1N/C (EKCC-12~20)
 12: 1N/O+2N/C (EKCC-25~60)

Capacitor Controlled at 400V/440V(Kvar)

Capacitor Switching Contactor

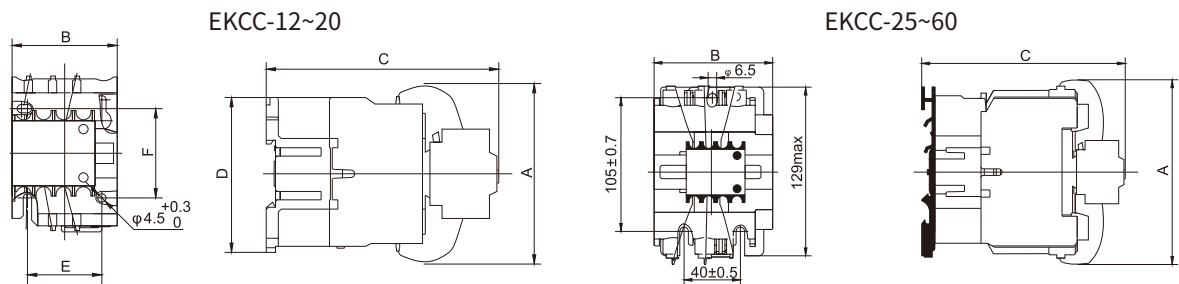
Company code

Technical Data

Technical Specification

Standard		IEC/EN60947-4-1						
Model No.		EKCC-12	EKCC-16	EKCC-20	EKCC-25	EKCC-33	EKCC-40	EKCC-60
Contactors size		EKC1-18	EKC1-25	EKC1-32	EKC1-40	EKC1-50	EKC1-65	EKC1-95
Rated Conventional Heating Current	Ith(A)	32	40	50	60	80	80	125
Rated Work Current	415V/le (A)	18	25	32	40	50	65	95
Capacitor Controlled	220V/240V(Kvar)	6	8	10	12.5	16.5	20	30
	400V/440V(Kvar)	12	16	20	25	33	40	60
Rated Insulation Voltage	Ui(V)	690	690	690	690	690	690	690
Rated Operation Voltage	Ue(V)	400	400	400	400	400	400	400
Electrical life(x10 ³)	Times	120	120	120	100	100	100	100
	Times	3000	3000	3000	3000	3000	3000	3000
Restrained Surge Capacity	x le	15						
Auxiliary Contact	Ith=10A	1NO+1NC			1NO+2NC			
	Control Capacity	AC-15 360VA; DC-13 33W						
COIL PARAMETERS								
Coil Power(VA)	Start-up	76	110	110	230	230	230	230
	Holding	10	11	11	32	32	32	32
Rated Control Power	Us(V)	24,36,48,110,220,380						
Pull time	Ms	12~22	15~24	15~24	20~26	20~26	20~26	20~35
Release time	Ms	4~12	5~19	5~19	8~12	8~12	8~12	6~20
Operation Range	Pick-up	(85%-110%)Us						
	Drop-out	(20%-75%)Us						

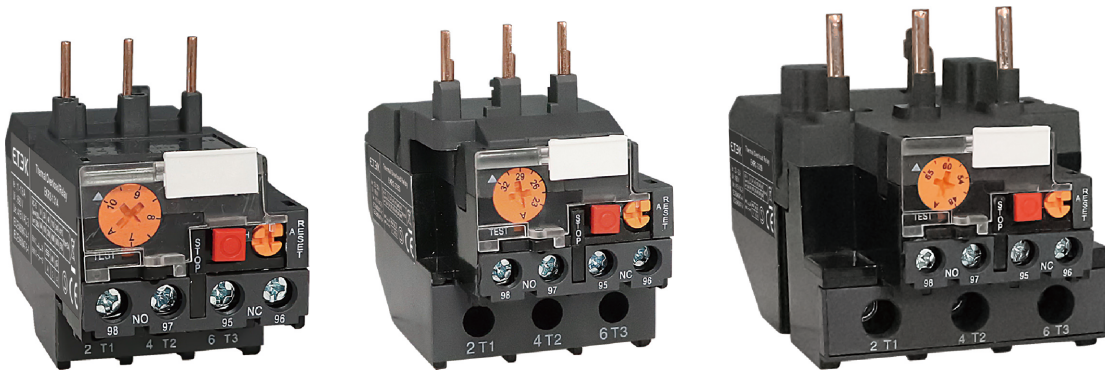
Overall and Mounting Dimension(mm)



Model	A Max	B Max	C Max	D Max	E	F	Note
EKCC-12	80	47	124	76	34/35	50/60	be fixed with 35mm din rail
EKCC-16	90	57	132	86	40	48	
EKCC-20	90	57	132	86	40	48	
EKCC-25	132	77	150	-	-	-	Not only fixed by screws but also could be fixed with 35mm and 75mm DIN rail
EKCC-33	132	77	150	-	-	-	
EKCC-40	132	77	150	-	-	-	
EKCC-60	135	87	162	-	-	-	

Wiring and installation

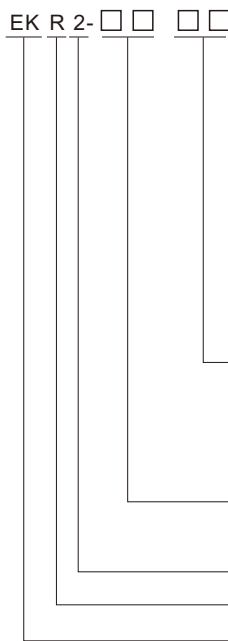
The connection terminals are protected through insulation cover, which is reliable and secure for installation and operation; For EKCC-12~20, screws are available for installation, as well as the DIN rail; For EKCC-25~60, 35mm or 75mm standard rail are available for installation.



Technical Data

Description	Electric value	AC50/60Hz, 690V, 0.1A~93A
	Tripping class	10A
	Mounting version	Plug-in: Available for EKR2-13,23,33

Type Designation



- Code of current rating
Basic specification, expressed with the rated operational current (380V/400V, AC3)
- Frame Size
- Design sequence Number
- Thermal Overload Relay
- Company code

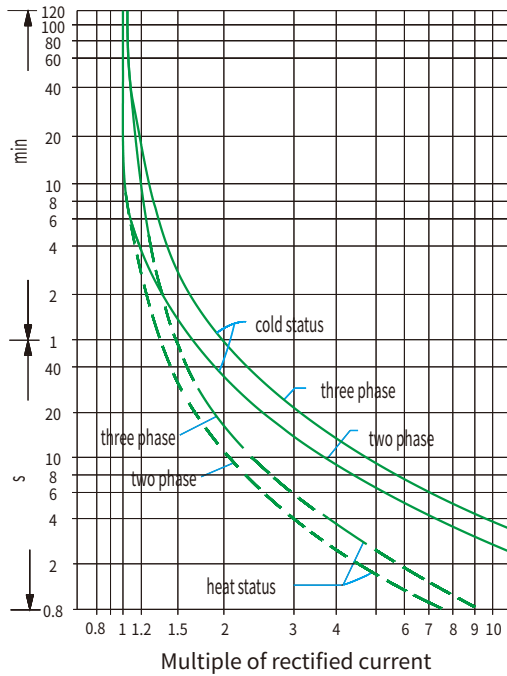
Feature	3-phase bimetal
	Continuously readjustable current settings
	Temperature compensation
	Tripping indicator
	Test button
	Stop button
	Manual and automatic reset button
	Electrically separated 1N/O plus 1N/C contact

Technical Specification

Protection property

Item	Series No.	I/In	Operating time Tp	Test condition
Overload protection	1	1.05	>2 h	Start from cold status
	2	1.2	≤2h	Start from heat status, right after item No.1
	3	1.5	≤2min	Start from heat status, right after item No.1
	4	7.2	2s<Tp≤10s	Start from cold status
Phase failure protection	5	Any two phases	>2 h	Start from cold status
		1.0		
	6	1.15	≤2 h	Start from heat status, right after item No.5

Curve



Main Technical Data

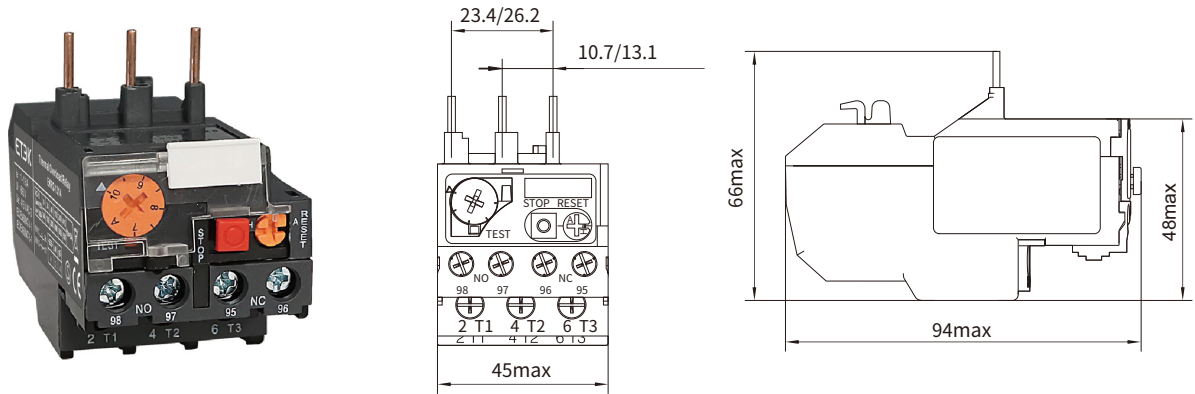
Phase failure protection function	Yes	
Automatic & manual reset	Yes	
Temperature compensation	Yes	
Tripping indicator	Yes	
Test & stop pushbutton	Yes	
Mounting mode	Plug-in	Yes
	Independent	Yes
	No. of contacts	1N/O+1N/C
Auxiliary contacts	Rated current (A) (AC-15 220V)	2.73
	Rated current (A) (AC-15 380V)	1.58
	Rated current (A) (DC-13 220V)	0.2

Assembly with contactor

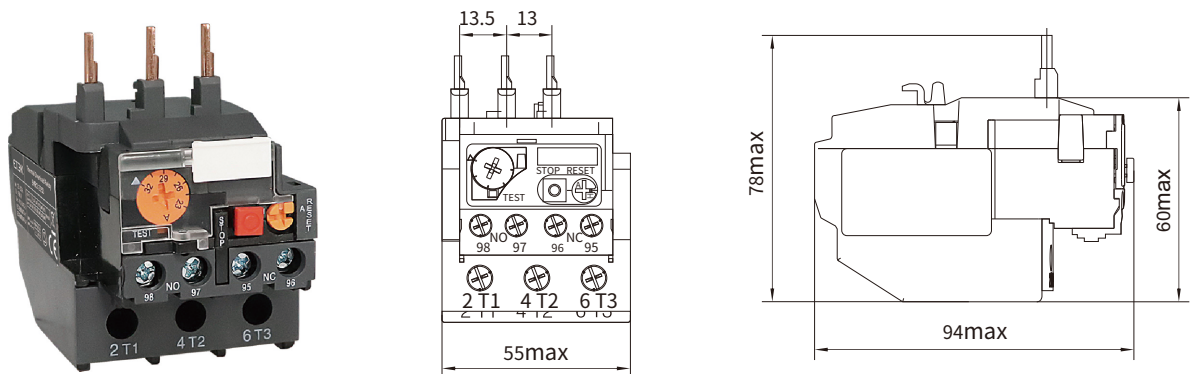
Model of overload relay	Code	Rated current (A)	Recommended fuse type(Recommended RT16)		Contactor Matched
			aM	gG	
EKR2-13	1301	0.1~0.16	0.25	2	EKC1-09 EKC1-12 EKC1-18 EKC1-25 EKC1-32
	1302	0.16~0.25	0.5	2	
	1303	0.25~0.4	1	2	
	1304	0.4~0.63	1	2	
	1305	0.63~1	2	4	
	1306	1~1.6	2	4	
	1307	1.6~2.5	4	6	
	1308	2.5~4	6	10	
	1310	4~6	8	16	
	1312	5.5~8	12	20	
	1314	7~10	12	20	
	1316	9~13	16	25	
	1321	12~18	20	35	
	1322	17~25	25	50	
EKR2-23	2353	23~32	40	63	EKC1-32
	2355	30~40	40	80	
EKR2-33	3353	23~32	40	63	EKC1-40 EKC1-50 EKC1-65 EKC1-80 EKC1-95
	3355	30~40	40	100	
	3357	37~50	63	100	
	3359	48~65	63	100	
	3361	55~70	80	125	
	3363	63~80	80	125	
	3365	80~93	100	160	

Overall and Mounting Dimension(mm)

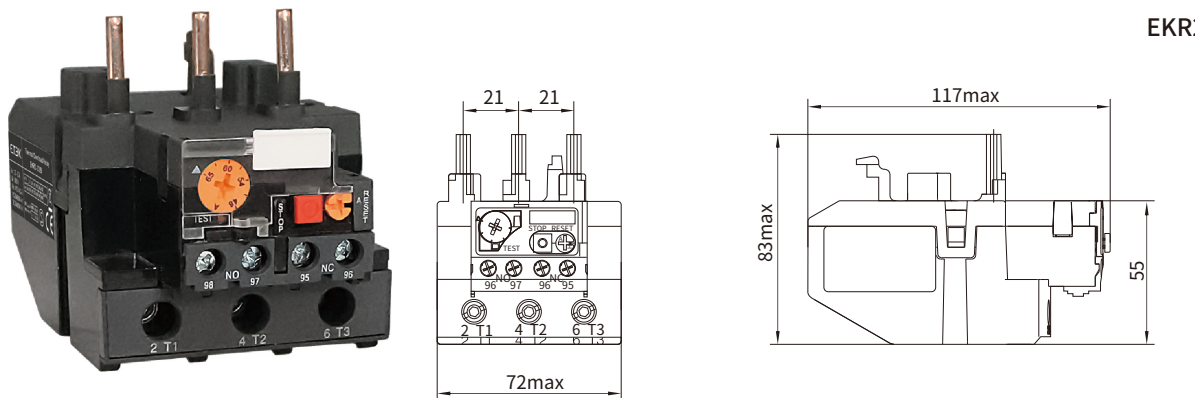
EKR2-13



EKR2-23



EKR2-33



Wiring

Items		EKR2-13	EKR2-23	EKR2-33	
Cross section area of conductor mm ²	Main circuit	Single core or stranded wire	1~4	4~10	4~35
		Wiring screw	M4	M4	M10
	Auxiliary circuit	Single core or stranded wire	0.5~2.5	0.5~2.5	0.5~2.5
		Wiring screw	M3.5	M3.5	M3.5

Product Selection Guide

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

EKM8	T	160	H	
↓	↓	↓	↓	
Product code	Adjustable type	Code of frame size current	Breaking capacity ICU/ICS(kA)	
Moulded-case circuit breaker (MCCB)	T: thermomagnetic adjustable T/A: single adjustable (i.e. thermal adjustable \magnetic fixed)	160, 250, 400, 630, 800 Note: 160 is upgraded type of 100 frame 225 is upgraded type of 250 frame 630 is upgraded type of 400 frame	S	
			160	35/25
			250	35/25
			400	50/35
			630	50/35
H-high performance 70KA				

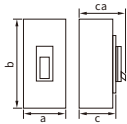
Z	3	300	160
↓	↓	↓	↓
Code of operating mode	Pole number	Code of release type and internal accessory	Rated current (A)
P: electric operation Z: rotary handle W: direct operation ①Electric operation DC1,DC2, DC3	3: 3-pole 4: 4-pole	The first digit represents release type 2: Has instantaneous release only 3: Complex release Note: Later two digits are the code of accessories (see accessory table 1)	160 25,32,40,50,63,80,100,125,160(0.8-1)In 250 125,160,200,250(0.8-1)In 400 250,320,400(0.8-1)In 630 500,630(0.8-1)In

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

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

Main Performance Indexes

Frame current (A)		160	250
Model		EKM8T-160S	EKM8T-250S
Pole number		3, 4	3, 4
Rated current (A)		25, 32, 40, 50, 63, 80, 100, 125A, 160(0.8-1)In	125, 160, 200, 250(0.8-1)In
Rated voltage (V)		AC400V	AC400V
Rated insulation voltage (V)		AC1000V	AC1000V
Short-circuit breaking capacity(KA)Icu/Ics	AC400V	35/25	35/25
Operating cycle number	Electrical life	6000	6000
	Mechanical life	10000	10000
Outline dim(mm) a-b-c-ca			
	3P	90-155-68-90	105-165-68-92
	4P	120-155-68-90	140-165-68-92
Weight (kg)	3P	1.1	1.35
	4P	1.4	1.75
Electric operating device (MD)			●
External driving operating handle			●
Automatic release		Thermal electromagnetic type	

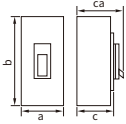


Main Performance Indexes

Frame current (A)		160	250
Model		EKM8T-160S	EKM8T-250S
ISO certificate		ISO 9001	
Environment conditions:			
- Temperature	°C	-10°C to +55°C	
- Humidity		50% at 50°C	
Method of installation		Indoor- fixed	
Method of connection		Front	
Front IP		40	
Pollution degree		III	
Materials of poles		Copper plated with silver	
Poles section	Mm2	70	120
Extensions of poles :			
-Length	Cm	≥ 10	≥ 10
-Material		silver plated	silver plated
-section	Mm2	70	120
Nos of phases		Three phases	
Frequency	Hz	50	
Nominal operation voltage	V	400	
Impulse withstand voltage	KV	8	
Power frequency withstand voltage	KV	3	
Nominal operation current :			
-at 40°C		160	250
-at 50°C		160	250
-at 60°C		0.93In	0.93In
-at 70°C		0.90In	0.86In
ICM	KA	105	
ICU	KA	65	
ICS	KA	75 % ICU	
ICW for one sec	KA	20 for 1sec	
Power losses for one pole In	W	10	18
Operation method		Hand method	
Over all dimensions	Cm	15.5*9*93	16.5*10.5*9.7
Long time delay :			
-Range		(0.8 to 1) In	
-Numbers of steps		2	
Long time delay :			
-Range		8-12In	
-Numbers of steps		2	
Nominal voltage for Shunt trip coil	V	220	
Nominal frequency for Shunt trip coil	Hz	50	
Breaking time	Ms	45	
Closing time	Ms	55	

Main Performance Indexes

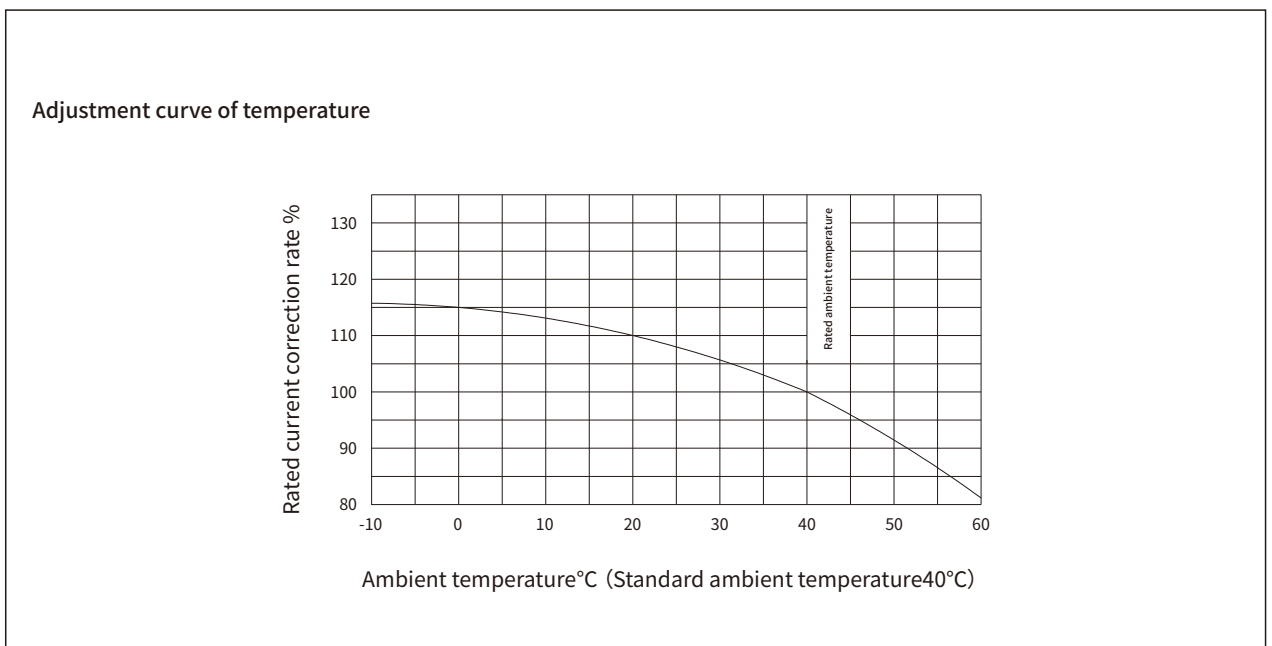
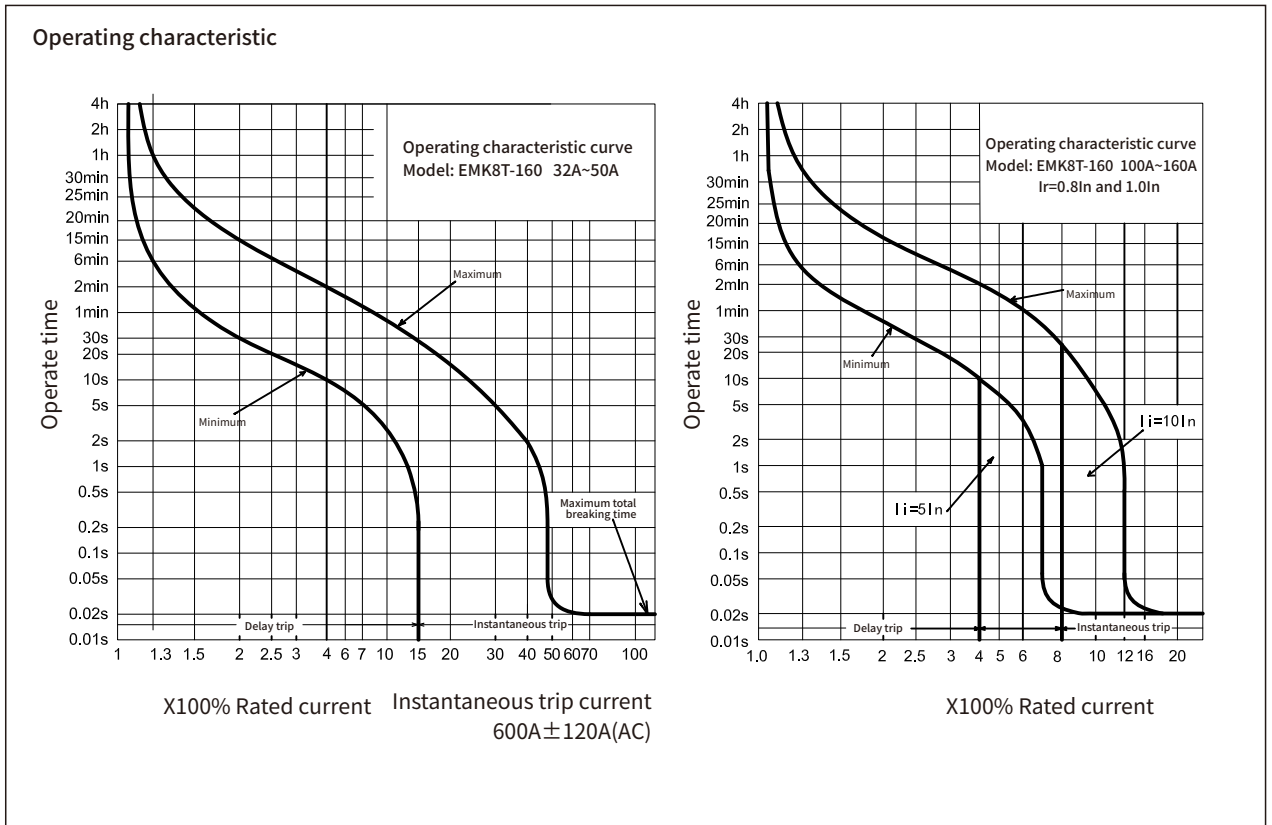
Frame current (A)		400	630
Model		EKM8T-400S	EKM8T-630S
Pole number		3, 4	3, 4
Rated current (A)		250, 320, 400(0.8-1)In	500, 630(0.8-1)In
Rated voltage (V)		AC400V	AC400V
Rated insulation voltage (V)		AC1000V	AC1000V
Short-circuit breaking capacity(KA)Icu/Ics	AC400V	50/35	50/35
Operating cycle number	Electrical life	6000	6000
	Mechanical life	10000	10000
Outline dim(mm) a-b-c-ca			
	3P	140-257-103-155	140-257-103-155
	4P	185-257-103-155	185-257-103-155
Weight (kg)	3P	4.3	4.65
	4P	5.5	6.3
Electric operating device (MD)			●
External driving operating handle			●
Automatic release		Thermal electromagnetic type	



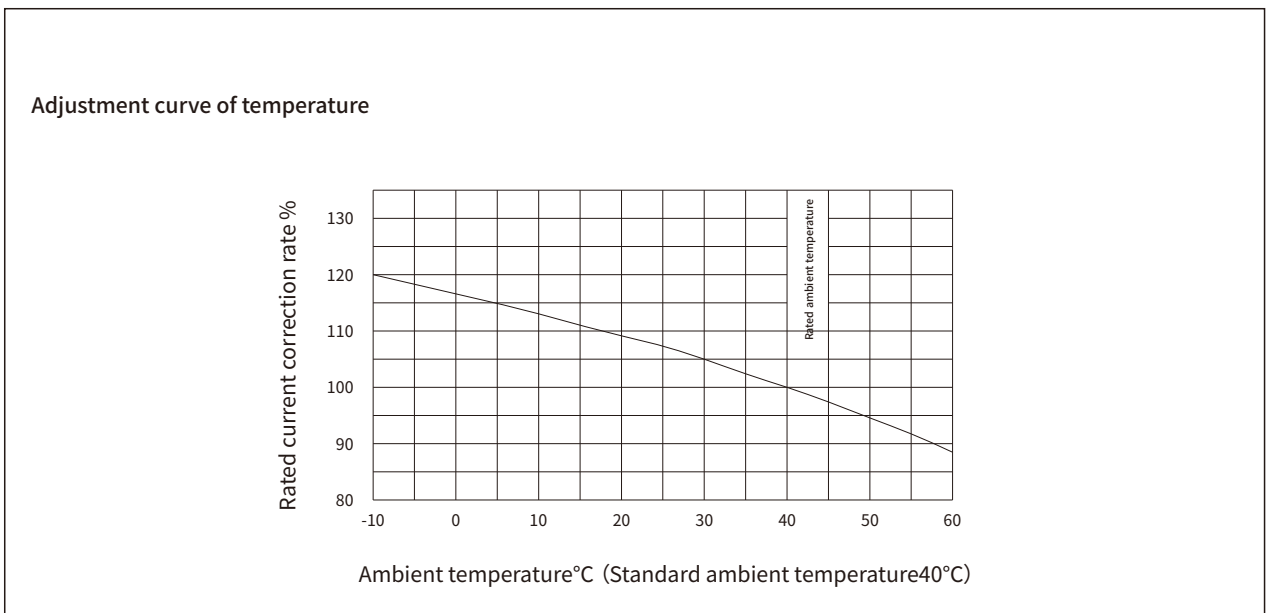
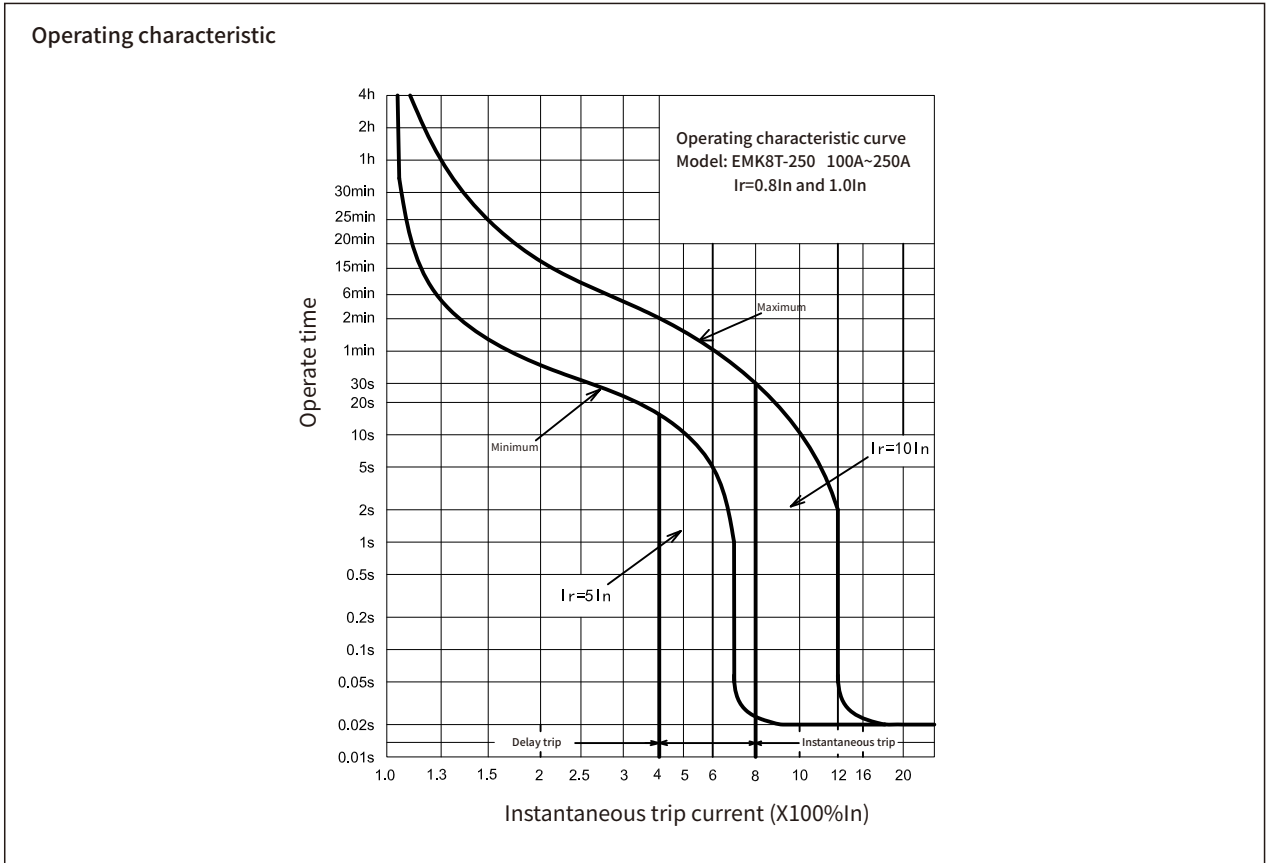
Main Performance Indexes

Frame current (A)		400	630
Model		EKM8T-400S	EKM8T-630S
ISO certificate		ISO 9001	
Environment conditions:			
- Temperature	°C	-10°C to +55°C	
- Humidity		50% at 50°C	
Method of installation		Indoor- fixed	
Method of connection		Front	
Front IP		40	
Pollution degree		III	
Materials of poles		Copper plated with silver	
Poles section	Mm2	240	2*185
Extensions of poles :			
-Length	Cm	≥ 10	≥ 10
-Material		silver plated	silver plated
-section	Mm2	240	2*185
Nos of phases		Three phases	
Frequency	Hz	50	
Nominal operation voltage	V	400	
Impulse withstand voltage	KV	8	
Power frequency withstand voltage	KV	3	
Nominal operation current :			
-at 40°C		400	630
-at 50°C		400	630
-at 60°C		0.95In	0.95In
-at 70°C		0.90In	0.90In
ICM	KA	105	
ICU	KA	65	
ICS	KA	75 % ICU	
ICW for one sec	KA	20 for 1sec	
Power losses for one pole In	W	23	32
Operation method		Hand method	
Over all dimensions	Cm	25.7*14*15.4	25.7*14*15.4
Long time delay :			
-Range		(0.8 to 1) In	
-Numbers of steps		2	
Long time delay :			
-Range		8-12In	
-Numbers of steps		2	
Nominal voltage for Shunt trip coil	V	220	
Nominal frequency for Shunt trip coil	Hz	50	
Breaking time	Ms	45	
Closing time	Ms	55	

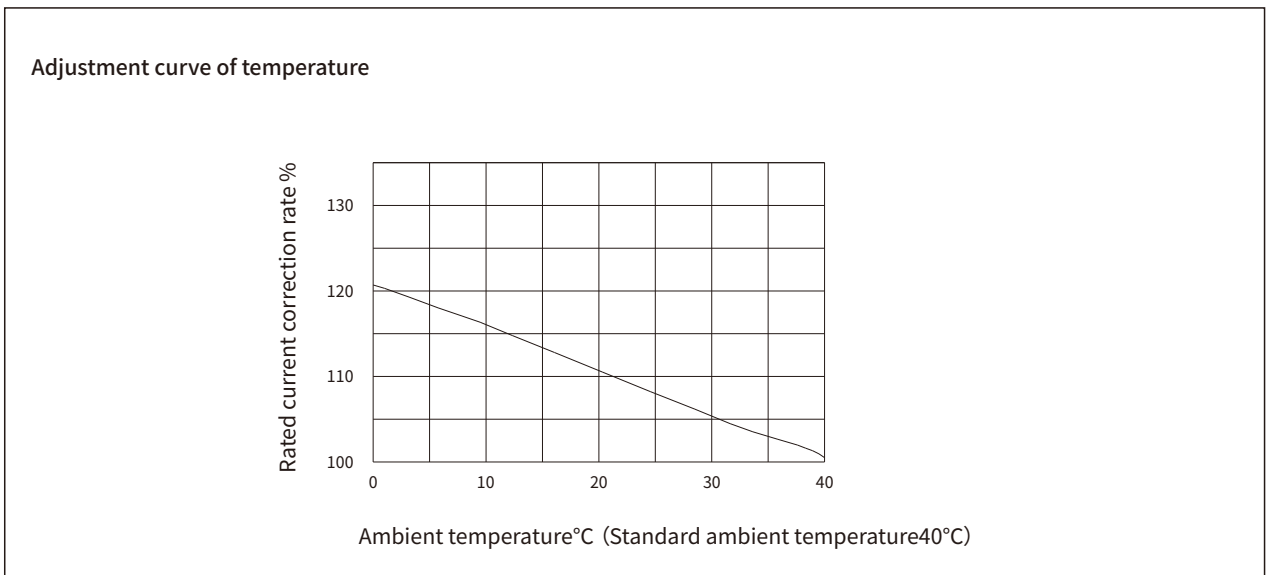
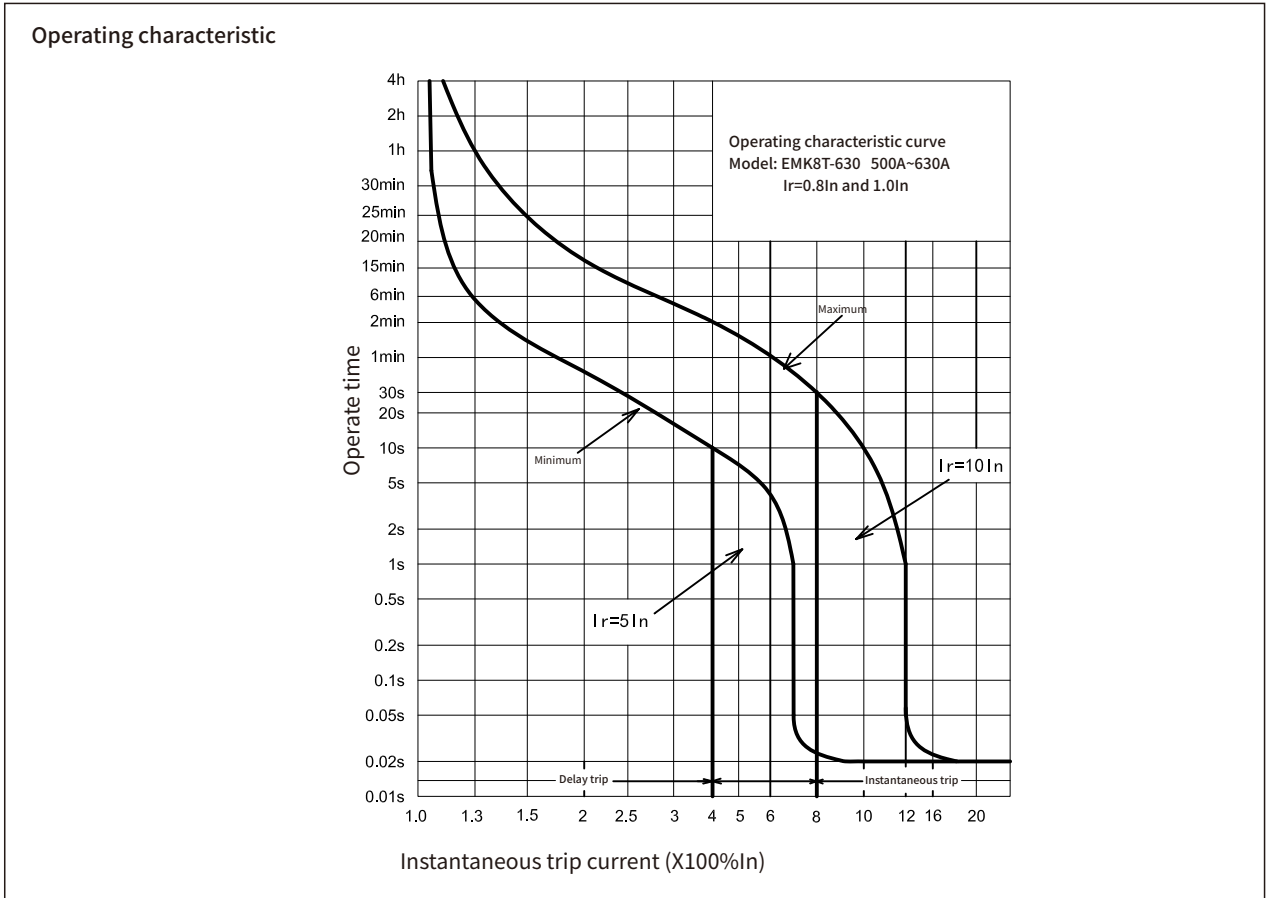
EKM8T-160 Operating characteristic curve



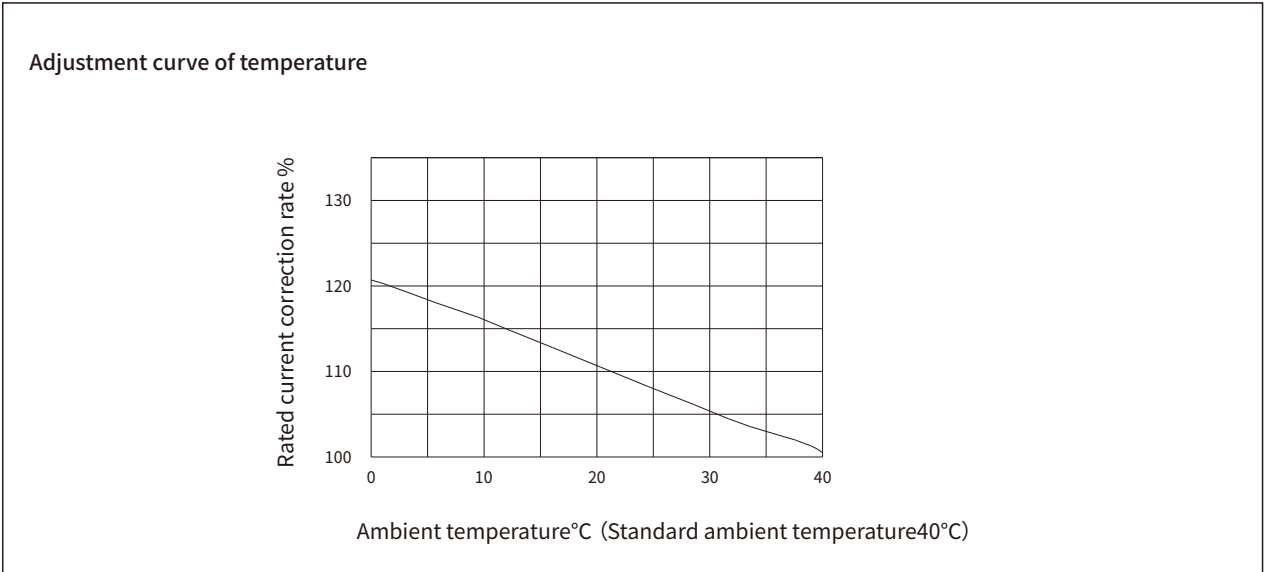
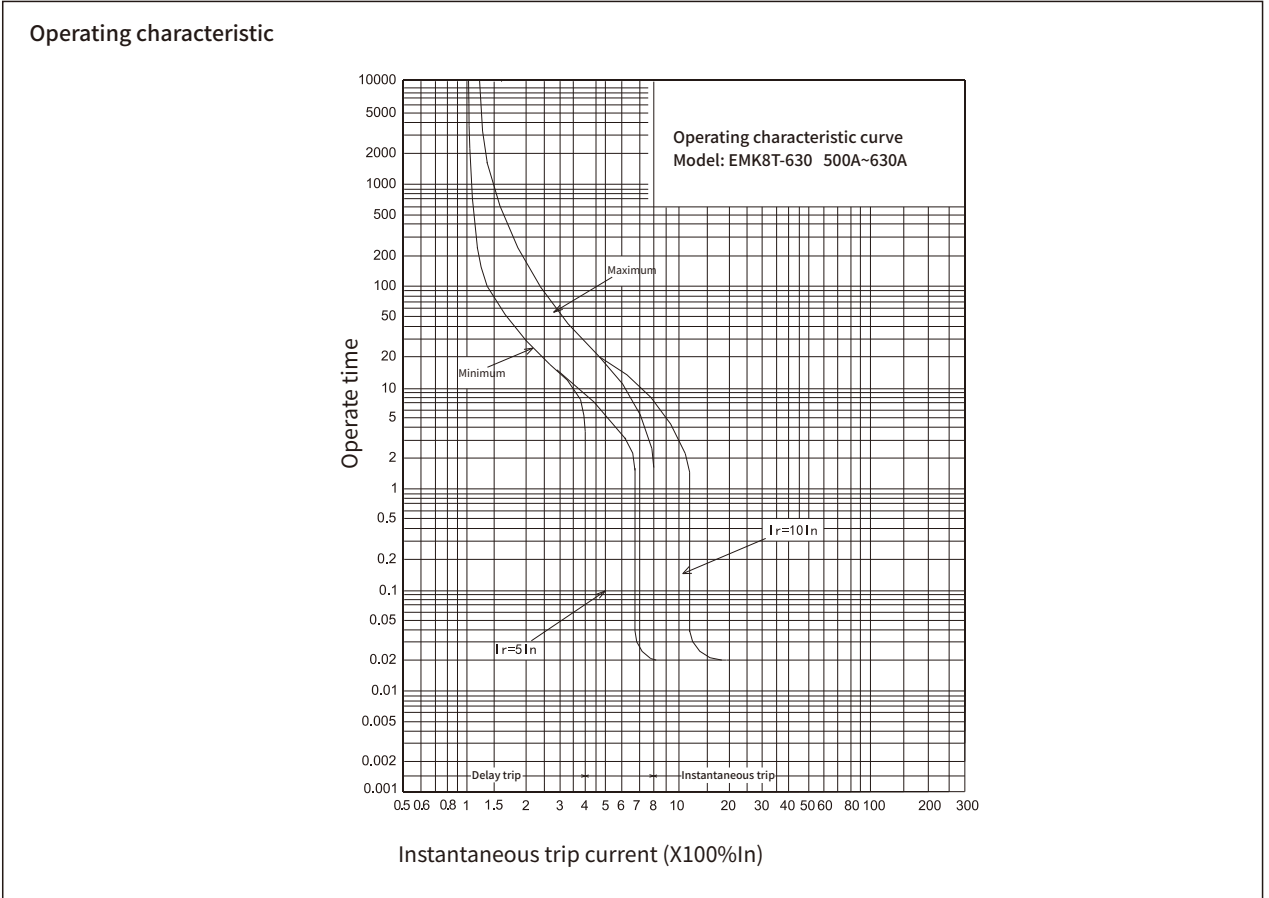
EKM8T-250 Operating characteristic curve



EKM8T-400 Operating characteristic curve



EKM8T-630 Operating characteristic curve



Product Overview

EKM8E series electronic circuit breakers are applicable for low-voltage power systems of AC 50Hz, rated operating voltage up to 1000V and rated operating current from 16A to 1250A.

Ambient and installation conditions

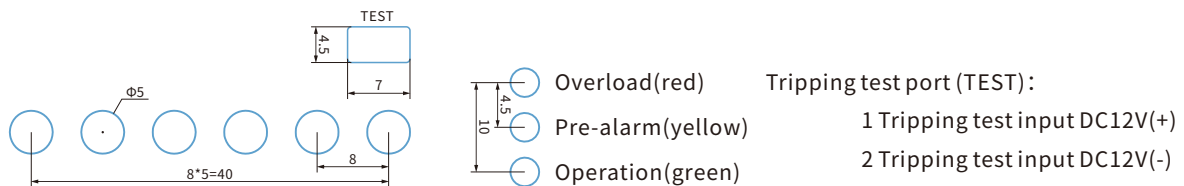
- Altitude up to 2000m;
- Ambient medium temperature should be within -10°C to +55°C ;
- It can withstand the effect of damp air;
- It can withstand the effect of salt fog or oil mist;
- It can withstand the effect of moulds;
- It can withstand the effect of nuclear radiation;
- The max inclination is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

Product Features

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

Panel and function description

Intelligent release panel



Panel adjustment knob as follows in turn:

- IR(A) I_{sd}(x IR) I_i(x IR)
- IR: Overload long delay tripping setting current; I_{sd}: Short-circuit short delay tripping setting current;
- I_i: Short-circuit instantaneous tripping setting current;

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

- t_R: Overload long delay setting time, factory default: 60s;
- t_{sd}: Short-circuit short delay setting time, factory default: 0.1s;
- I_p: Overload pre-alarm setting current, factory default: 0.85*IR;

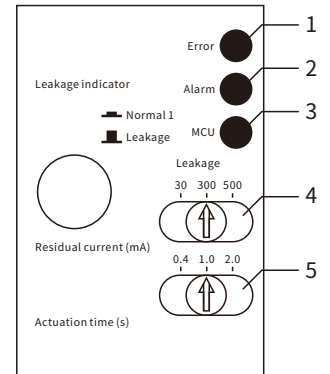
Intelligent communication port (COM):

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

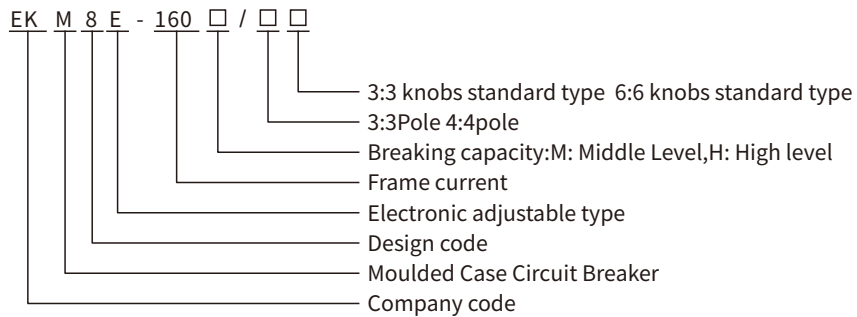


Panel With Residual Current Protection

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



Product Selection Guide



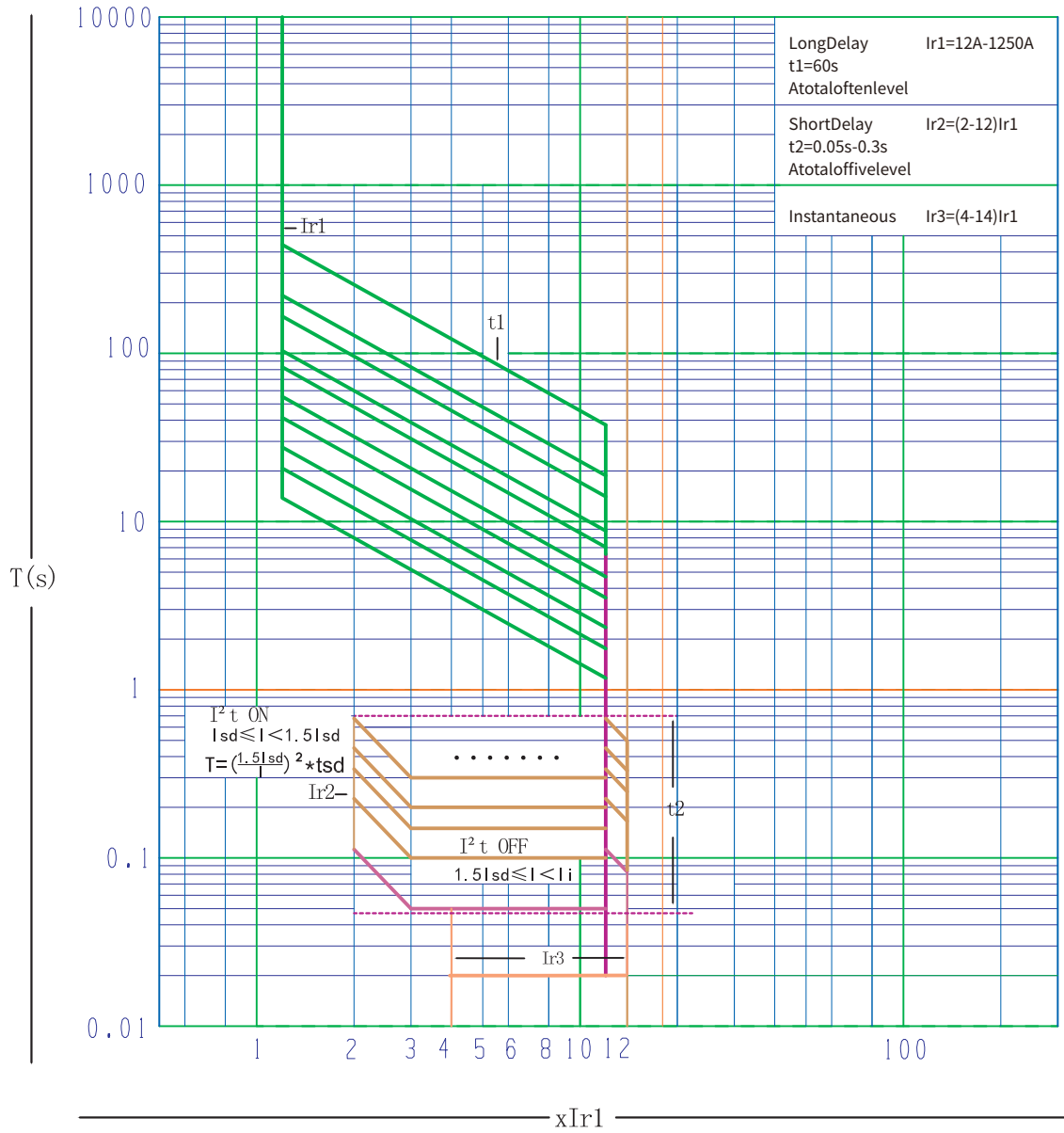
Main Performance Indexes


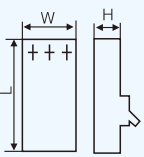
Frame current (A)		400	630	800	1000	1250	
Model		EKM8E-400H	EKM8E-630H	EKM8E-800H	EKM8E-1000H	EKM8E-1250H	
Pole number		3, 4	3, 4	3, 4	3, 4	3, 4	
Rated current (A)		400 (0.4-1)In	400, 630 (0.4-1)In	630, 800 (0.4-1)In	800, 1000 (0.4-1)In	1000, 1250 (0.4-1)In	
Rated voltage (V)		AC400V					
Rated insulation voltage (V)		AC1000V					
Short-circuit breaking capacity(KA)Icu/Ics	AC400V	50/35	65/50	65/50	65/50	65/50	
Operating cycle number	Electrical life	6000	6000	6000	6000	6000	
	Mechanical life	10000	10000	10000	10000	10000	
Outline dim(mm) a-b-c-ca							
		3P	140-257-103-155	140-257-103-155	210-257-103-155	210-257-103-155	210-257-103-155
		4P	185-257-103-155	185-257-103-155	280-257-103-155	280-257-103-155	280-257-103-155
Weight (kg)	3P	4.6	5.0	8.2	8.9	8.9	
	4P	5.9	6.6	10.3	13.3	13.3	
Electric operating device (MD)		●					
External driving operating handle		●					
Automatic release		Electronic type					

Main Performance Indexes

Frame current (A)		400	630	800	1000	1250
Model		EKM8E-400H	EKM8E-630H	EKM8E-800H	EKM8E-1000H	EKM8E-1250H
ISO certificate		ISO 9001				
Environment conditions: - Temperature - Humidity	°C	-10°C to +55°C 50% at 50°C				
Method of installation		Indoor- fixed				
Method of connection		Front				
Front IP		40				
Pollution degree		III				
Materials of poles		Copper plated with silver				
Poles section	Mm2	240	2*185	2*300	2*300	2*400
Extensions of poles : -Length -Material -section	Cm Mm2	≥ 10 silver plated 240	≥ 10 silver plated 2*185	≥ 10 silver plated 2*300	≥ 10 silver plated 2*300	≥ 10 silver plated 2*400
Nos of phases		Three phases				
Frequency	Hz	50				
Nominal operation voltage	V	400				
Impulse withstand voltage	KV	8				
Power frequency withstand voltage	KV	3				
Nominal operation current : -at 40°C -at 50°C -at 60°C -at 70°C		400 400 0.95In 0.90In	630 630 0.95In 0.90In	800 800 0.93In 0.86In	1000 1000 0.93In 0.80In	1250 1250 0.93In 0.80In
ICM	KA	105				
ICU	KA	50	50	65	65	65
ICS	KA	75 % ICU				
ICW for one sec	KA	20 for 1sec				
Power losses for one pole In	W	23	32	51	73	73
Operation method		Hand method				
Over all dimensions	Cm	25.7*14*15.4	25.7*14*15.4	27.5*21*15.4	27.5*21*15.4	27.5*21*15.4
Long time delay : -Range -Numbers of steps		$I_1=(0.4 \text{ to } 1) I_n$ 9				
Long time delay : -Range -Numbers of steps		$(2-12)I_1$ 9				
Nominal voltage for Shunt trip coil	V	220				
Nominal frequency for Shunt trip coil	Hz	50				
Breaking time	Ms	45	45	45	45	45
Closing time	Ms	55	55	55	55	55

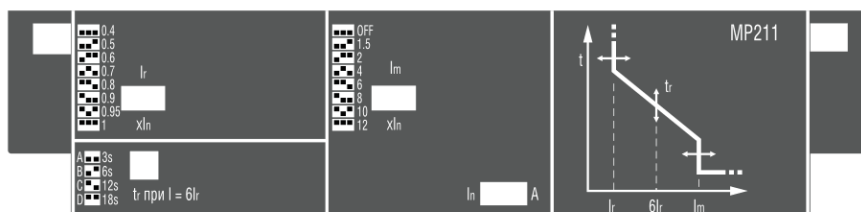
Protection characteristic curve



Electronic Circuit Breakers			
Model		EKM8E-1600	
Breaking Capacity Code		H	
Rated Current of Frame size– Inm	(A)	1600A	
Rated Current–In(40,50 or 55°C)	(A)	800 – 1000 – 1250 – 1600A	
Rated Insulation Voltage –Ui(a.c.) 50–60Hz	(V)	750V	
Rated operation Voltage –Ue(a.c.) 50–60Hz	(V)	400V	
Number of Pole		3P	
Rated ultimate short Circuit breaking Capacity kA Icu AC400V/50Hz O–CO	(kA)	70	
Rated service short Circuit breaking Capacity kA Ics AC400V/50Hz O–CO–CO	(kA)	50	
Rated short–circuit breaking capacity Icm(peak)/cos φ AC400V/50HZ O–CO	(kA)	143/0.2	
Rated impulse withstand Voltage –Uimp	(V)	8000	
Dielectric Property (V)		3000	
Ionization distance (mm)		≤80/0※	
Endurance	Total Cycles	3000	
	Electrical Life	500	
	Mechanical Life	2500	
Over Current trip	Thermal release adjustable	(0,4–0,5–0,6–0,7–0,8–0,9–1)xIn	
	Magnetic release adjustable	(1,5–2–4–6–8–10–12)xIn	
Operating Curve at 6I _r		3S–6S–12S–18S	
Category (EN 60947–2/ IEC 60947–2)	Main circuit	A/B	
	Auxiliary circuit	AC–15	
Under Voltage Release		✓	
Shunt Release		✓	
Auxiliary Contact		✓	
Alarm Contact		✓	
Auxiliary Contact and Alarm Contact		✓	
Handle Operation Mechanism		✓	
Electrical Operastion Mechanism		✓	
DIN clips		–	
Terminal cover		✓	
Phase seperator		✓	
Extention Handle		✓	
Outine dimensions 	W (mm)	3P	210
		4P	–
	L (mm)	3P	406
		4P	–
	H (mm)	3P	138.5
		4P	–
Weight	Fixed version 3P/4P		17.2/22.2
	Plug–in version 3P/4P		–
	Draw out version 3P/4P		22/30.1

Electronic release

EKM8E series circuit breaker (Inm 1250 and 1600) applies the most advanced MP211
 The electronic release has function of intellectual protection.

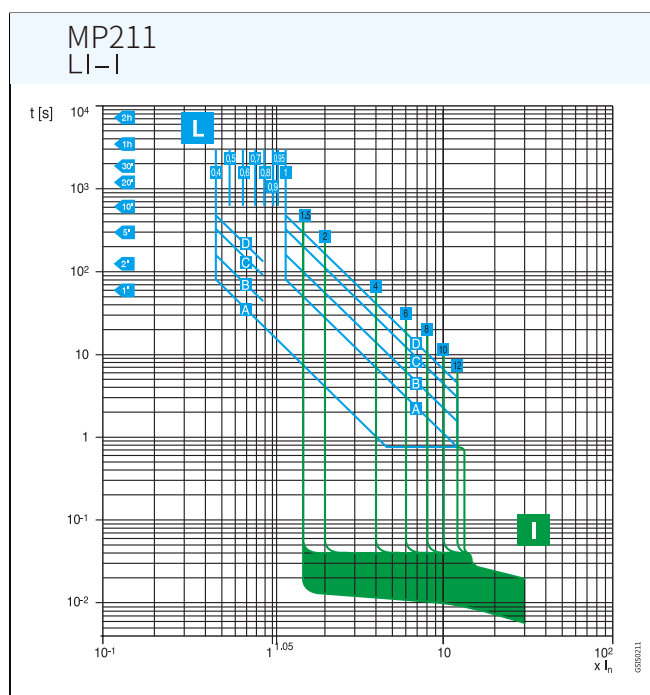


Electronic Release Settings

Table1 MP211 type

S.No.	Function	Settings	Type	Factory reset
			MP211	
			Poles 3P	
			Rating (A) 1600	
1	L	Overload Current Setting (A)	(0.4,0.5,0.6,0.7,0.8, 0.9,0.95,1.0)xIn	1.0In
2		Time Delay at Overload Current Setting	3S,6S,12S,18S	3S
3	I	Instantaneous Current Setting	(1.5, 2, 4, 6, 8, 10, 12,OFF)xIn	10In

Electronic release characteristic curves



Tel-
0086-577-62718777

Fax-
0086-577-62774090

Email-
sales@etek-china.com

THE EXPORT
& IMPORT COMPANY BY
WENZHOU WANGKE TRADING CO.,LTD.

No. 288 Wei 17th Road,
Economic Development Zone,
Yueqing City Zhejiang China.

ETEK[®]
E TEK ELECTRIC

ZHEJIANG ETEK
ELECTRICAL TECHNOLOGY CO.,LTD.

