XUCKY

Scope Of Application

XUCKY CM1E low voltage Current electronic adjustable circuit breaker (hereinafter referred to as circuit breaker), the circuit breaker has small size, high breaking capacity, short arc, anti vibration. Its rated insulation voltage is 800V, suitable for the distribution network of AC 50Hz, rated voltage AC400V, rated current up to 1250A and below, used to distribute electrical energy and protect the circuit and power equipment from overload, short-circuit, undervoltage and other faults. It can also be used for the infrequent conversion of the line and the infrequent starting of the motor. The circuit breaker can be vertically installed, or horizontally installed. The low voltage Moulded case circuit breaker has isolation function.

Main Features

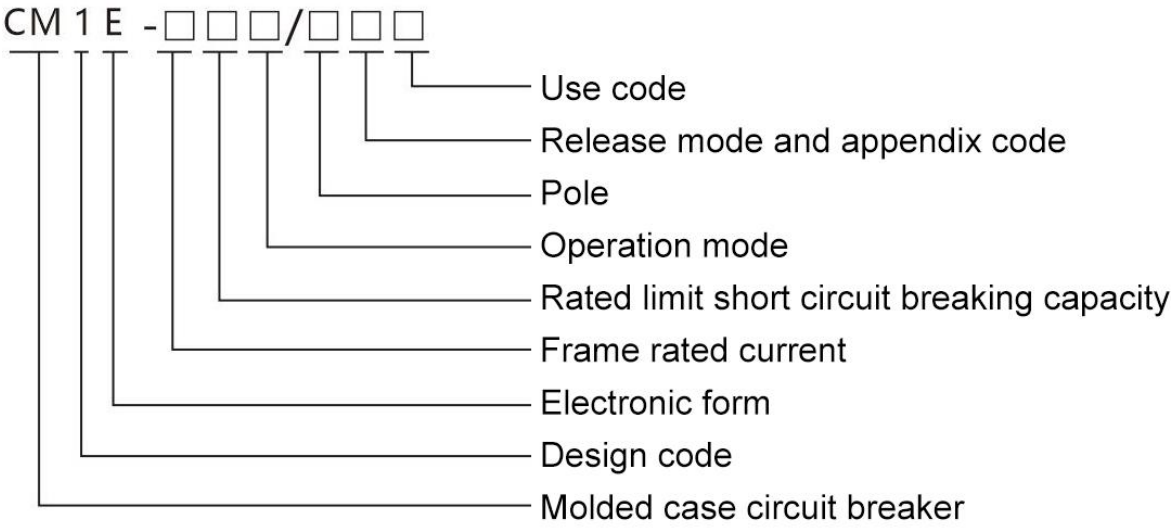
XUCKY CM1E adjustable electronic moulded case circuit breaker has three protection function, the circuit breaker with utilization category B connected with other short-circuit protection device in the same circuit has completely optional under short circuit circumstance; With five tripping features, the user can set the equipment through the shunt release according to the load current, electronic shunt release is powered by circuit breaker itself; current signal and control power is from the circle circuit transformer installed in the circuit breaker; With fire protection shunt release for alarming but not trip, when the load current is overloaded, the circuit breaker does not trip, and output the passive contact, driving the corresponding alarm device; The dimensions and specifications are the same as those of CM1 MCCB, the installation can be changed.

Circuit breakers have isolation functions. Symbol: 

Normal Service and Installation Conditions

1. The elevation of the installation site is not more than 2000m.
2. The ambient temperature is not more than +40℃, and the average temperature within 24h is not more than +35℃, the lower limit of the ambient temperature is -5℃.
3. When the max temperature is +40℃, the relative humidity of air is not more than 50%, can allow a higher relative humidity at a lower temperature, such as 90% at 20℃, special measures should be taken for the condensation produced occasionally on the product due to temperature changes.
4. The pollution degree is 3.
5. The circuit breaker installation of main circuit category is class III, the installation category of auxiliary circuit and control circuit not connect to the main circuit is II.
6. Use category is A or B.

Model and Meaning

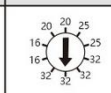
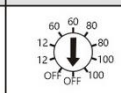
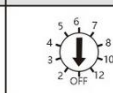
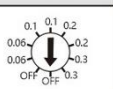
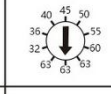
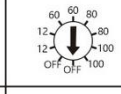
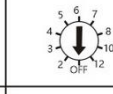
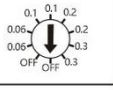
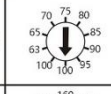
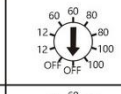
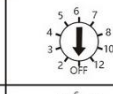
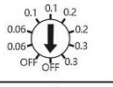
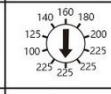
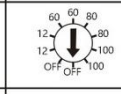
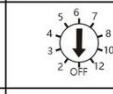
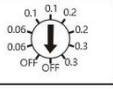
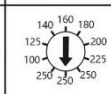
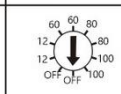
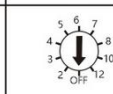
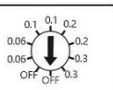
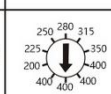
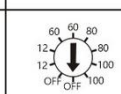
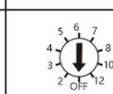
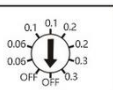
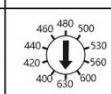
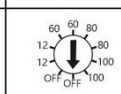
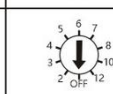
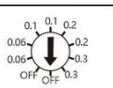


Note: 1) No code for circuit breaker for distribution, 2 for circuit breaker for protecting motor.
2) No code for handle direct operation, P for electric operation, Z for the rotating handle.
2. Classification
A. According to the rated limit short-circuit breaking capacity, divided into standard (S), high breaking (H);
B. According to the mode of connection, divided into three types: front connection, rear connection and plug-in;
C. According to the pole, divided into three-poles and four-poles. The N-phase of the 4-pole products is not equipped with the overcurrent release, and the N-phase is on-off with the other phase;
D. According to the accessory device, divided into with accessory device and without accessory device: accessory device is divided into internal and external devices: the internal device has shunt release, under voltage release, auxiliary contact, alarm contact, the external device has rotating handle operating mechanism, electric operation mechanism etc..

Accessory Name	Accessory Code	Tripping Mode
-	300	Electric Tripping Unit
Alarm Contact	308	
Shunt Release	310	
Auxiliary Contact	320	
Undervoltage Release	330	
Shunt Release + Auxiliary Contact	340	
Shunt Release + Undervoltage Release	350	
Two Groups of Auxiliary Contacts	360	
Auxiliary Contact + Undervoltage Release	370	
Alarm Contact + Shunt Release	318	
Alarm Contact + Auxiliary Contact	328	
Undervoltage Release + Alarm Contact	338	
Auxiliary Contact + Alarm Contact + Shunt Release	348	
Two Groups of Auxiliary Contacts + Alarm Contact	368	
Undervoltage Release + Auxiliary Contact + Alarm Contact	378	

Note: 1. CM1E-100, 225 only have accessories of 308, 310, 320, 330, 328;
2. CM1E-400 only have 3-pole accessories of 308, 310, 320, 330, 328;

3. CM1E-400 only have no 4-pole accessories of 350, 318, 338, 348, 378.

Frame size	Rated current	Parameters of current and time					
		Ir1(1)	t1(s)	Ir2(XIr1)	t2(S)	Ir3(XIr1)	Ir0(XIr1)
CM1E-100	In=32						
	In=63						
	In=100						
CM1E-225	In=225						
CM1E-250	In=250						
CM1E-400	In=400						
CM1E-630	In=630						
CM1E-800	In=800						

Note: in the setting, the dial switch must be set in place!

Note:

1. Adjust overload long delay action current Ir1, according to the different circuit breaker rated current, 4-10 files can be adjusted;
2. Adjust long delay action time t1, 4 files can be adjusted;
3. Adjust short-circuit short-delay action current Ir2, 9 files can be adjusted;
4. Adjust short delay action time t2, 4 files can be adjusted;
5. Adjust short-circuit instantaneous action current Ir3 action, 9 files can be adjusted;
6. Adjust pre-alarm action current Ir0, 7 files can be adjusted.

Main Technical Parameters

The setting range of intelligent controller is shown in the table

Setting Project		Setting Range
Setting value of overload long delay	Current setting value Ir1	(30~100)A,(100~250)A,(200~400)A,(400~630)A,(630~800)A,(800~1250)A
	Time setting value t1	(12、60、80、100)s
Setting value of short circuit and short delay	Current setting value Ir2	(2~12)In
	Time setting value t2	(0.06, 0.1, 0.2, 0.3)s
Setting value of instantaneous short circuit	Current setting value Ir3	(4~14)In

The main technical data of circuit breaker are shown in table

Model	CM1E-100		CM1E-250		CM1E-400		CM1E-630		CM1E-800		CM1E-1250
Frame Current Inm(A)	100		250		400		630		800		1250
Breaking Capacity	L	M	L	M	L	M	M	H	M	H	H
Rated Current In(A)	63,80,100		225,250		300,400		500,630		700,800		1000,1250
Pole	3,4	3,4	3,4	3,4	3,4	3,4	3,4	3,4	3,4	3,4	3,4
Rated Operational Voltage Ue(V)	AC400										
Rated Insulation Voltage Ui(V)	800										
Rated Impulse Withstand Voltage Uimp(V)	8000										
Rated limit short circuit breaking capacity Icu(kA)	50	85	50	85	65	100	65	100	65	100	80
Rated running short circuit breaking capability Ics(kA)	35	50	35	50	42	65	42	62	42	62	50

Rated short-time withstand current Icw/0.5s(kA)		-	-	5	8	10	15/1S
Usage Category		A	A	B	B	B	B
Flashover Distance (mm)		≤50	≤50	≤100	≤100	≤100	
Operating Performance	Power-on (Times)	1500	1000	1000	500	500	500
	Power-off (Times)	8500	7000	4000	3000	3000	3000

Characteristics of release

a. Characteristics of Electric Trip Unit

With overload long-delay inverse time, short-circuit short-delay inverse time, short-circuit short delay time limit, short-circuit instantaneous action and other protection features, the protection characteristics can be set up by the users.

b. Overload long delay inverse time protection action characteristics in Table 4.

c. Short-circuit short-delay protection action characteristics in Table 5.

d. Short-circuit instantaneous protection action characteristics in Table 6.

Controller Types	Basic type		Intelligent communication type, programming communication type, liquid crystal type
Current	Action Time		
1.05Ir1	No action within 2 hours		
1.3Ir1	≤1h action		
2Ir1	Inm=100A, 250A Setting time t1(s)	t1=(12, 60, 80, 100)s	12s-100s(most progress 1s)
	Inm=400A, 630A, 800A Setting time t1(s)	t1=(12, 60, 80, 100)s	12s-100s(most progress 1s)
Thermal Memory	30min, can be cleared after power off (this function is optional function in intelligent communication type and programming communication type)		

1. Action time $I^2t1 = (2Ir1)^2t1$ (1.2Ir1≤I <ir2);
2. Action time tolerance is ± 20%;
3. Returnable time is not less than 70% action time.

Short delay overcurrent protection characteristics

Current	Action Time					
Ir2≤I < 1.5Ir2	Inverse Time		I²t2=(1.5Ir2)²t2			
1.5Ir2≤I < Ir3	Definite time	Setting time t2(s)	0.06	0.1	0.2	0.3
		Tolerance (s)	±0.02	±0.03	±0.04	±0.06
		Returnable time (s)				0.21

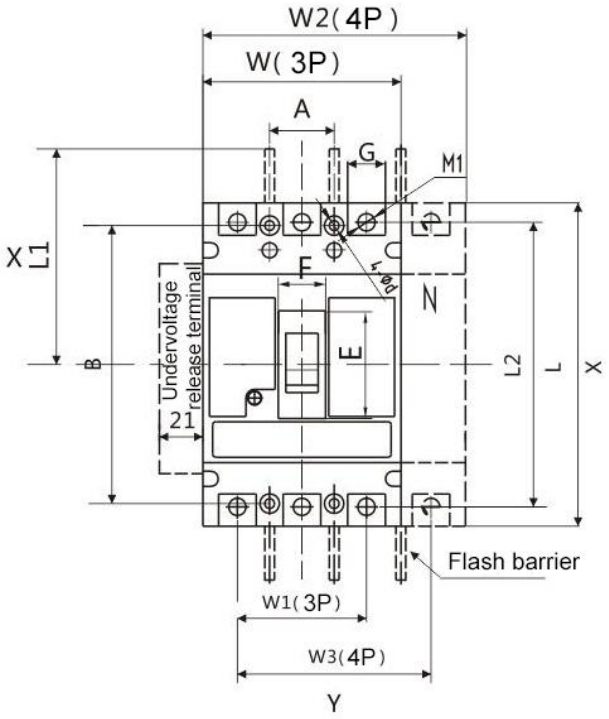
Note: Inverse time action time tolerance is ± 20%.

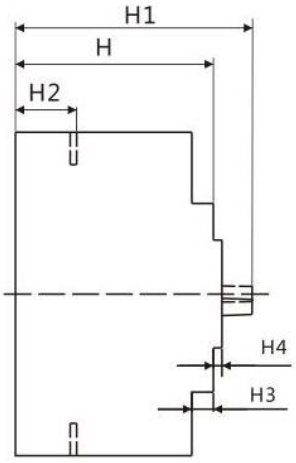
Short-circuit instantaneous protection action characteristics

Rated Current	100, 225(250)	400, 630	800
Setting Current	Ir3=4, 6, 7, 8, 10, 11, 12, 13, 14	Ir3=4, 6, 7, 8, 10, 11, 12, 13, 14	Ir3=4, 5, 6, 7, 8, 9, 10, 11, 12
Operation Characteristics	I≤0.85Ir3 non-operation I≥1.15Ir3 operatino		

Technical data of accessory device

a. Rated values of auxiliary contacts and alarm contacts are shown in table





Type	Frame Rated Current Inm(A)	Conventional Thermal Current Ith(A)	Rated Operational Current Ie(A)	
			AC400V	DC220V
Auxiliary Contact	Inm≤400	3	0.3	0.15
	Inm≥400	3	0.4	0.15
Alarm Contact	100≤Inm≤800	3	0.3	0.15

b. The rated control power supply voltage (Us) and rated operating voltage (Ue) of the control circuit release and electric mechanism are shown in Table 8

Type			Rated Voltage (V)	
			AC50Hz	DC
Release	Shunt Release	Us	220/380	110、220
	Undervoltage Release	Ue	220/380	-
Electric Mechanism		Us	220/380	110、220

c. When the applied voltage of the shunt release is between 70%~100% of the rated power voltage, the circuit breaker should be reliably broken.

d. When the power voltage drops to 70% ~ 35% of the rated voltage of the undervoltage release, the undervoltage release can reliably break the circuit breaker; When the power voltage is lower than 35% rated voltage of the undervoltage release, the undervoltage release can prevent the circuit breaker from closing; When the power voltage is higher than 85% rated voltage of the undervoltage release, the undervoltage release can ensure the reliable closing of the circuit breaker.

e. Electric operating mechanism at the rated frequency, between 85% ~ 110% power voltage, the circuit breaker can be reliably closed.

Outline and Installation Dimensions

1. The dimensions are shown in figure 3~figure 6 and the table

(1) Dimensions of front connection see Figure 3 (X-X, Y-Y is the center of 3P circuit breaker)

Model		CM1E-100	CM1E-250	CM1E-400	CM1E-630	CM1E-800
Front Connection	W	92	107	150		210
	W1	60	70	96		140

	L	150	165	257		280
	L1	100	132	220		240
	L2	132	144	244		243
	H	93	90	107		116
	H1	112	110	147		155
	H2	29	24	38		46
	H3	12	5	9.5		15
	H4	4	4	6.5		5
	E	55	65	92		83
	F	25	25	68		68
	G	18	22	30		44
	W2	122	142	198		280
	W3	90	105	144		210
	M1	M8	M8	M10	M10	M12

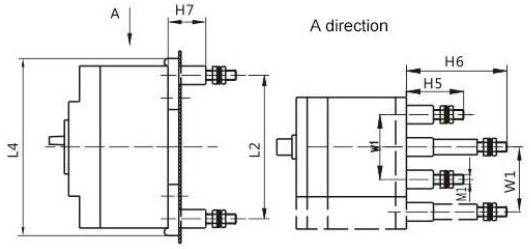


Figure 4 TXM1E-100/250 Fixed back-panel wiring

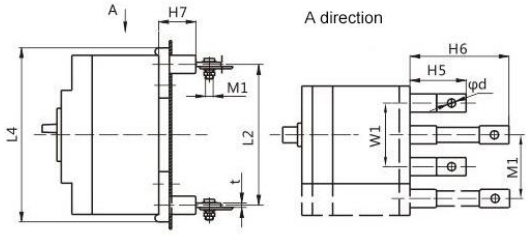


Figure 5 TXM1E-400/800 Fixed back-panel wiring

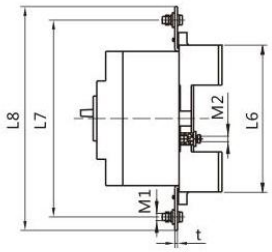


Figure 6 Plug-in back-panel wiring (3P)

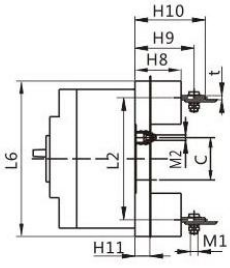


Figure 7 Plug-in back-panel wiring (3P/4P)

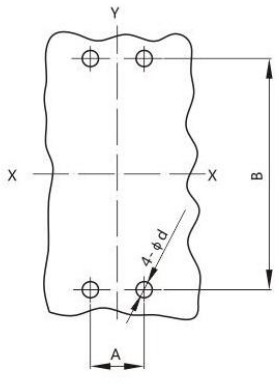


Figure 8 Hole size of front wiring mounting plate

(2) Dimensions of rear connection see Figure 4 and 5

(3) Dimensions of plug-in type front connection see Figure 6

(4) Dimensions of plug-in type rear connection see Figure 7

Model		CM1E-100	CM1E-250	CM1E-400	CM1E-630	CM1E-800
Rear Connection	L4	164	173	267		295
	H5	53	55	68		84
	H6	93	100	128		-
	H7	35	35	37		37
	M1	M8	M8	M10	M10	M12
	d	-	8.5	10.5		13
	t	-	-	8.5		16
Plug-in Connection	L6	168	183	279		296
	H8	50	50	60		61
	H9	64	72	84		97
	H10	76	87	107		148
	H11	18	18	21		16
	M1	M8	M8	M10	M10	M12
	M2	M6	M6	M6	M8	M8
	L7	220	252	357		-
	L8	250	276	387		-

2. Dimensions for mounting plate opening

(1) Dimensions of front connection see Figure 8 (X-X, Y-Y is the center of 3P circuit breaker)

Model		CM1E-100		CM1E-250		CM1E-400		CM1E-630		CM1E-800
Pole		3	4	3	4	3	4	3	4	3
Dimensions for mounting plate opening (mm)	A	30		35		44		70		70
	B	129		126		194		243		303
	d	4.5		4.5		7		7		7

(2) Dimensions of rear connection see Figure 9 (X-X, Y-Y is the center of 3P circuit breaker)

Model		CM1E-100		CM1E-250		CM1E-400		CM1E-630		CM1E-800	
Pole		3	4	3	4	3	4	3	4	3	4
Dimensions for mounting plate opening (mm)	A	60	-	70	-	96	-			140	-
	A1	-	90	-	105	-	144			-	210
	B	72	-	87	-	124	-			178	-
	B1	-	102	-	122	-	172			-	248
	C	90		93		164				158	
	D	132		144		224				243	
	Φ1	22		24		32				48	
	Φ2	5.5		5.5		6.5				7	

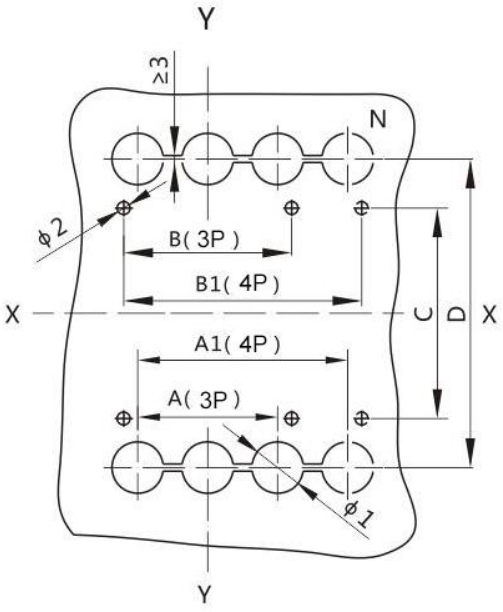


Figure 9 Hole size of mounting plate for back panel wiring

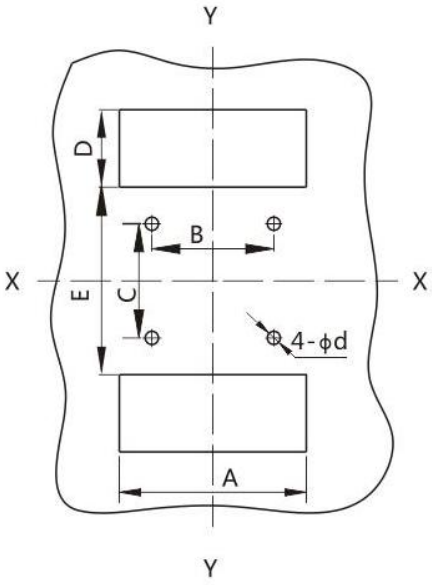


Figure 10 Hole size of mounting plate for plug-in front panel wiring

Model	CM1E-100	CM1E-250	CM1E-400
Pole	3	3	3

Dimensions for mounting plate opening (mm)	A	92	107	150
	B	60	70	60
	C	56	54	129
	D	38	63.2	62
	E	92	94	109
	d	6.5	6.5	8.5

(4) Dimensions of plug-in type rear connection see Figure 10 (X-X, Y-Y is the center of 3P circuit breaker)

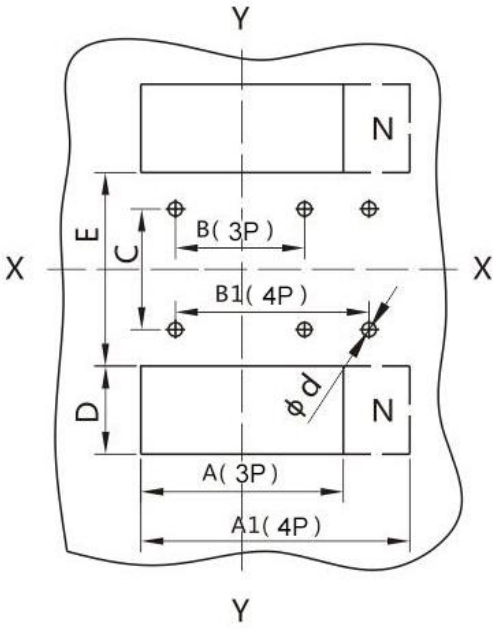


Figure 11 Hole size of mounting plate for plug-in back panel wiring

Model		CM1E-100		CM1E-250		CM1E-400		CM1E-630		CM1E-800	
Pole		3	4	3	4	3	4	3	4	3	4
Dimensions for mounting plate opening (mm)	A	94	-	110	-	152	-			215	-
	A1	-	125	-	145	-	200			-	283
	B	60	-	70	-	60	-			140	-

	B1	-	90	-	105	-	108			-	210
	C	56		54		129				143	
	D	48		58		65				65	
	E	90		88		166				183	
	d	6.5		6.5		8.5				10	

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