

YCM7RE series


Electronic Adjustable Circuit Breaker

OPERATION INSTRUCTION

Standard: IEC 60947-2

CNC

Deliver
Power For Better Life

-  Before installing and using this product, please read this manual carefully and pay more attention to safety.

YCM7RE series

Electronic Adjustable Circuit Breaker

Instructions

Operating conditions

1. Ambient temperature

a) Maximum not higher than +40°C

b) Minimum not lower than -5°C

c) The average value within 24h does not exceed +35°C

2. Altitude: $\leq 2000\text{m}$;

3. Air conditions

At mounting site, relative humidity not exceed 50% at the maximum temperature of +40°C. For the wettest month, the maximum relative humidity averaged shall be 90% while the lowest temperature averaged in that month is +20°C, special measures should be taken to occurrence of condensation.

4. Pollution grade: 3, the pollution grade of accessories installed in the circuit breaker is 2.

5. The installation category of main circuit breaker shall be III, and the installation category of auxiliary circuit and control circuit shall be II.

6. Installation conditions

Mounting conditions: inclination between mounting plane and vertical plane not exceed $\pm 5^\circ$. It adopts up inline, and the external magnetic field of the installation site should not exceed 5 times of the geomagnetic field in any direction.

Type designation

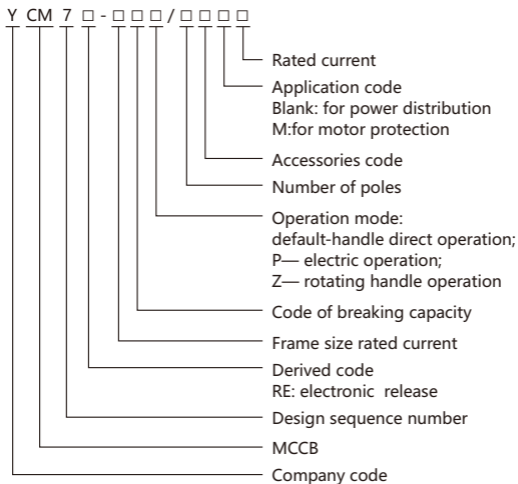


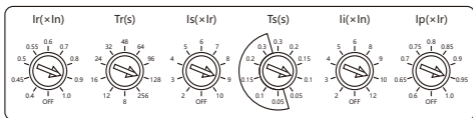
Table 1 Accessories

Accessory name	Accessory code	Release Mode	
		Magnetic release only	Compound release
No accessory		200	400
Alarm contact		208	308
Shunt release		210	410
Auxiliary contact		220	420
Under-voltage release		230	430
Auxiliary contact+ Shunt release		240	440
Under-voltage release+ Shunt release		250	450
Two groups of auxiliary contacts		260	460
Under-voltage release+ Auxiliary contact		270	470
Alarm contact+ Shunt release		218	418
Alarm contact+ Auxiliary contact		228	428
Alarm contact+ Under-voltage release		238	438
Auxiliary contact+ Alarm contact+Shunt release		248	448
Alarm contact+Shunt release+ Under-voltage release		258	458
Alarm contact+Two groups of auxiliary contacts		268	468
Auxiliary contact+Alarm contact+ Under-voltage release		278	478

Main parameters of circuit breaker

Model	Rated current I_n (A)	Rated insulation voltage U_i (V)	Rated operation voltage U_e (V)	Rated short-circuit breaking capacity		Rated service short-circuit breaking capacity $I_{cs}(kA)$ 400V	Number of poles	$I_r = \times I_n(A)$
				ultimate $I_{cu}(KA)$ 400V	ultimate $I_{cs}(kA)$ 400V			
YCM7RE-160M	32A, 100A, 160A	800	400	32	32	25	3, 4	0.4, 0.45, 0.5, 0.55, 0.6, 0.7, 0.8, 0.9, 1.0
YCM7RE-250M	250A			35	35	25		
YCM7RE-400M/630M	400A, 630A			50	50	35		
YCM7RE-800M	630A, 800A			50	50	35		

Adjustable Panel of Electronic Controller



Notice:

1. Ir: Adjustable setting value of over-load protection, it could be adjusted as per customer's requirements;
2. Tr: Adjustable setting value of long time-delay operated time $Tr \pm 20\%$, tripping time at the status of $6I_r$ can be set as per customer's requirements;
3. Is: Adjustable setting value of short time-delay current;
4. Ts: Adjustable setting value of short time-delay operated time, it is divided into two types: fixed time limit Ts (0.05s, 0.1s, 0.15s, 0.2s, 0.3s) and reverse time limit Ts (0.05s, 0.1s, 0.15s, 0.2s, 0.3s).
5. Ii: Adjustable setting value of instant current;
6. Ip: Adjustable setting value of over-load alarm current.

Electronic controller characteristics

It has functions of overload long time-delay protection (reverse time), short circuit short time-delay protection (reverse time/fixed time), short circuit instantaneous protection.

Characteristics of overload long time-delay reverse time protection

Current	Tripping time ($Tr=8s, 12s, 16s, 24s, 32s, 48s, 64s, 96s, 128s, 256s$)
$I \leq 1.05I_r$	Not tripping within 2 hours
$1.05I_r < I \leq 1.3I_r$	Tripping within 2 hours
$I \geq 1.3I_r$	$T = (1.5 I_r / I)^2 * Tr$
Remarks: T is actual tripping time	

Characteristics of short circuit short time-delay protection

Setting multiple	$I_s=(2, 3, 4, 5, 6, 7, 8, 9, 10) \times I_r$		
Setting mode	Characteristics $T_s=(0.05s, 0.1s, 0.15s, 0.2s, 0.3s)$		
Fixed time	Action current	less than $0.9I_s$, not tripping more than $1.1I_s$, tripping	
	Action time	$T=T_s$	
Reverse time	Action current	less than $0.9I_s$, not tripping more than $1.1I_s$, tripping	
	Action time	$I < 8I_r$	$T=(8 I_r/I)^2 \times T_s$
		$8I_r \leq I < I_i$	$T=T_s$

Characteristics of short circuit instantaneous protection

Setting multiple	$I_i=(2, 3, 4, 5, 6, 8, 9, 10, 12) \times I_n$		
Action	Action current	less than $0.8I_i$, not tripping more than $1.2I_i$, tripping	
Characteristics	Action time	$< 0.05s$	

Wiring Requirements

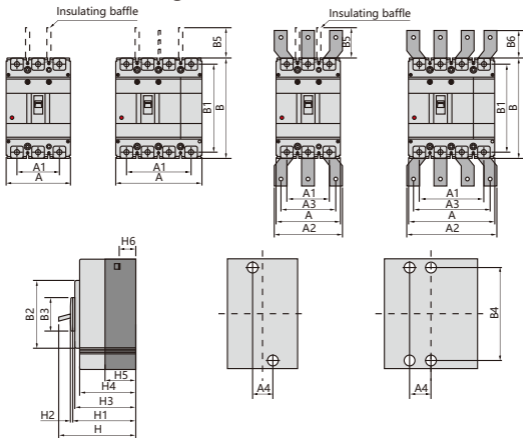
The cross-sectional area of copper conductor corresponding to rated current

Rated current $I_n(A)$	16 20	25	32	40 50	63	80	100	125 140	160	180 200 225	250	315 350	400
Cross-sectional area of conductors(mm^2)	2.5	4	6	10	16	25	35	50	70	95	120	185	240

Rated current (A)	Cable		Copper bars	
	Quantity	Cross-sectional area(mm^2)	Quantity	Size($mm \times mm$)
500	2	150	2	30×5
630	2	185	2	40×5
700, 800	2	240	2	50×5

Because the rated current of the electronic circuit breaker is adjustable, so check whether the cross section a area of the connecting wire is corresponding to the rated current. Suggest to use the connecting wire corresponding to the maximum rated current of the circuit breaker as far as possible.

Overall and mounting dimensions



Electronic adjustable circuit breaker	Overall dimensions											
	A		A1		A2		A3		B	B1	B2	B3
	3P	4P	3P	4P	3P	4P	3P	3P				
YCM7RE-160M	90	120	60	90	-	-	-	-	155	134	102	50
YCM7RE-250M	105	140	70	105	-	-	-	-	165	144	102	50
YCM7RE-400M	140	185	88	132	140	196	112	168	257	230	179	90
YCM7RE-630M	140	185	88	132	140	196	112	168	257	230	179	90
YCM7RE-800M	210	280	140	210	180	250	140	210	275	243	192	90

Electronic adjustable circuit breaker	Overall dimensions									Installing dimensions		Bolt
	B5	B6	H	H1	H2	H3	H4	H5	H6	A4	B4	
YCM7RE-160M	50	-	109	83	4	68	61	20.7	24	30	132	M8
YCM7RE-250M	100	-	120	91	4	68	61	45	24	35	126	M8
YCM7RE-400M	110	42	155	107	5	105	97	45	36	44	194	M10
YCM7RE-630M	110	42	155	107	5	105	97	45	36	44	194	M10
YCM7RE-800M	110	87	155	107	5	104	97	15	24	70	243	M12

Conventional setting table for protection characteristics

Customer should indicate the factory setting value of all protection characteristics when ordering, if customer has no special requirements, all protection characteristics are as shown below.

Conventional setting table for protection characteristics

Protection characteristics				Remark
Power distribution protection	Overload long time-delay	Setting current I_r	I_n	
		Setting time T_r	60s	
	Short circuit short time-delay	Setting current I_s	$8 \times I_r$	
		Setting time T_s	0.3s	
	Short circuit instantaneous	Setting current I_i	$10 \times I_r$	
	Pre-preparation Alarm	Setting current I_p	$0.7 I_r$	
Motor protection	Overload long delay	Setting current I_r	I_n	
		Setting time T_r	60s	
	Short circuit short time-delay	Setting current I_s	$10 \times I_r$	
		Setting time T_s	0.3s	
	Short circuit instantaneous	Setting current I_i	$12 \times I_r$	
	Pre-alarm	Setting current I_p	$0.7 I_r$	

Short circuit short time-delay protection (reverse time/fixed time), short circuit instantaneous protection

Ordering instruction

1. Name and model of circuit breaker
2. Rated current and setting multiples of circuit breakers
3. Accessories Name and Rated Voltage



CERTIFICATE

Product Model: YCM7RE series

Standard: IEC 60947-2

Inspector : **CNC 006**

Production date: Printed on the product
or package.

This product is qualified according
to the delivery inspection

CNC

YCM7RE Series

CNC ELECTRIC

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