

# YCM7E

ELECTRONIC MOULDED CASE CIRCUIT BREAKER

- High-end surface design
- Highly intelligent chip control
- Separate cover structure

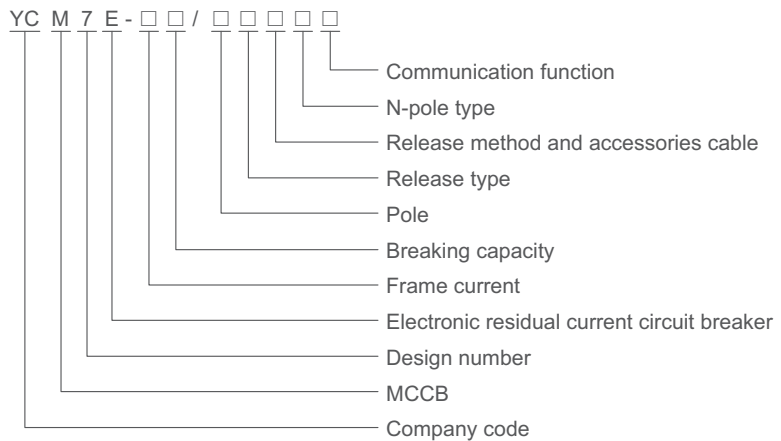


### ▼ Product overview

YCM7E series electronic moulded case circuit breaker, suitable for AC 50/60Hz, its rated insulation voltage is 800V, rated operating voltage is 400V, rated operating current to 800A in the circuit with overload, long delay inverse time, short circuit short delay inverse time, short circuit short delay fixed time, short circuit instantaneous, can protect lines and power equipment from damage;

The protection features of circuit breaker are complete and accurate, which can improve the reliability of power supply and avoid unnecessary power outage, among which, the controller with a communication interface can be "four remote" to meet the requirements of the control center and automation system.

### ▼ Product model and meaning



Communication function	Blank: without; H: with
N-pole type	A: Always connected; B: Have breakpoint
Application code	Blank: power distribution; 2: motor protection
Accessory	00: No accessories; 08: Alarm; 10: Shunt; 20: Auxiliary; 30: Undervoltage; 40: Shunt + auxiliary; 50: Shunt + undervoltage; 60: Two groups of auxiliary; 70: Undervoltage + auxiliary; 18: Shunt + alarm; 28: Auxiliary + alarm; 38: Undervoltage + alarm; 48: Shunt + Auxiliary + alarm; 68: Double auxiliary + alarm; 78: Undervoltage + auxiliary + alarm
Release type	3: Electronic release
Pole	3:3P; 4:4P
Breaking capacity	M: Higher type; H: High type
Frame current	125, 250, 400, 630(Capacity-increase type), 630, 800
Standard	IEC 60947-2
Certification	CE

## ▼ Main features

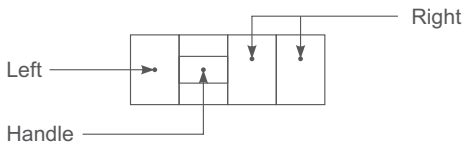
1. Selectivity coordination: YCM7E electronic moulded case circuit breaker has three-section protection function, the circuit breaker of category B and other short-circuit protection devices connected in the same circuit has selective coordination function under short circuit condition;
2. With three sections of protect action current, action time selection: the user can set and adjust the release according to the load current requirements;
3. Self-power supply: the electronic release provides energy by the circuit breaker itself, and the current signal and the working power of the release come from the current transformer installed in the circuit breaker;
4. With "pre-alarm" indicator: when the actual operating current flowing through the circuit breaker reaches or exceeds the pre-alarm current  $I_{ro}$ , the "pre-alarm" light emitting diode indicator on the cover of the circuit breaker is yellow;
5. With overload indication: When the load current exceeds the overload long delay current, the light emitting diode on the cover of circuit breaker is red;
6. High current instantaneous release function: When the circuit breaker is closed or in operation, in case of short circuit high current ( $>20I_n$ ), the circuit breaker is directly released by the electromagnetic release mechanism

## ▼ Main technical parameters

Model	YCM7E-125			YCM7E-250		YCM7E-400		YCM7E-630 (Capacity-increase type)		YCM7E-630		YCM7E-800			
Frame current $I_{nm}$ (A)	100(125)			250		400		630		630		800			
Rated current $I_r1$	32	63	100 (125)	250		400		630		630		800			
Overload long delay setting current $I_{r1}$ (A)	16,20 25,32	32,35 40,45 50,55 60,63	63,65 70,75 80,85 90,95 100 (125)	100,125,140 160,180,200 225,250		200,225,250 280,315,350 400		400,420,440 460,480,500 530,560,600 630		400,420,440 460,480,500 530,560,600 630		630,640,660 680,700,720 740,760,780 800			
Rated working voltage $U_e$ (V)	400/690			400/690		400/690		400/690		400/690		400/690			
Rated insulation voltage $U_i$ (V)	1000			1000		1000		1000		1000		1000			
Rated impact voltage $U_{imp}$ (kV)	12kV			12kV		12kV		12kV		12kV		12kV			
Pole	3, 4			3, 4		3, 4		3, 4		3, 4		3, 4			
Breaking capability	M	H		M	H		M	H		M	H		M	H	
Rated limit short-circuit breaking capacity $I_{cu}$ (kA)	AC400	50	85	50	85	70	100	70	100	70	100	70	100		
	AC690	8	15	15	/	20	/	30	/	30	/	30	/		
Rated operating short-circuit breaking capacity $I_{cs}$ (kA)	AC400	35	55	35	50	50	70	50	70	50	70	50	70		
	AC690	4	10	10	/	10	/	15	/	15	/	15	/		
Rated short-time withstand current $I_{cw}$ (kA)/1s	3			3		5		8		8		10			
Category of use	A			A		B		B		B		B			
Flashover distance (mm)	≥ 50			≥ 50		≥ 100		≥ 100		≥ 100		≥ 100			
Electrical life (times)	8000			8000		7500		7500		7500		7500			
Mechanical life (times)	Be maintained	20000		20000		10000		10000		10000		10000			
	Maintenance-free	40000		40000		20000		20000		20000		20000			
Overall dimension (mm)	W	92	122	107	142	150	198	182		182		210	280		
	L	150			165		257		270		270		280		
	H	110			110		146		155		155		155		

## ▼ Accessory code and mounting position

□ Alarm contact, ■ Auxiliary contact, ● Shunt release, ○ Undervoltage release



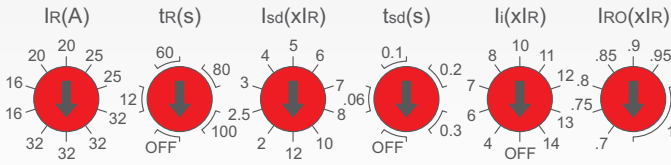
Accessories code	Accessories name	YCM7E-125 YCM7E-250		YCM7E-400		YCM7E-630 YCM7E-800	
		3P	4P	3P	4P	3P	4P
300	Without parts						
308	Alarm contact						
310	Shunt release						
320	Auxiliary contact						
330	Undervoltage release						
340	Shunt release, auxiliary contact						
350	Shunt release, undervoltage release						
360	Two sets auxiliary contact						
370	Auxiliary contact, undervoltage release						
318	Shunt release, alarm contact						
328	Integrated auxiliary alarm contact						
338	Undervoltage release, alarm contact						
348	Shunt release, auxiliary contact, alarm contact						
368	Two sets auxiliary contact, alarm contact						
378	Auxiliary contact, undervoltage release, alarm contact						

# YCM7E

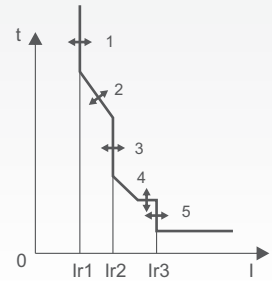
Electronic moulded case circuit breaker

## ▼ Electronic release structure

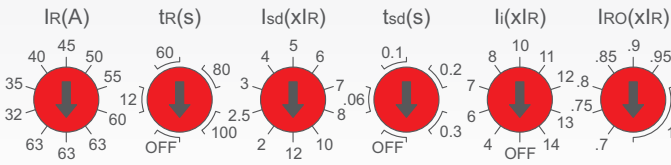
YCM7E-125, In=32A



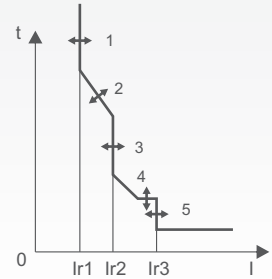
Characteristic curve



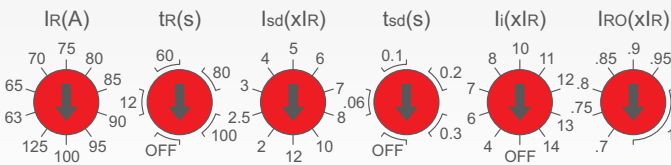
YCM7E-125, In=63A



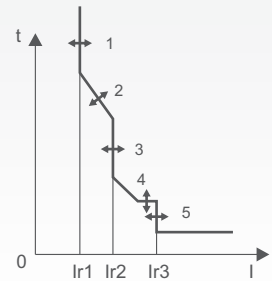
Characteristic curve



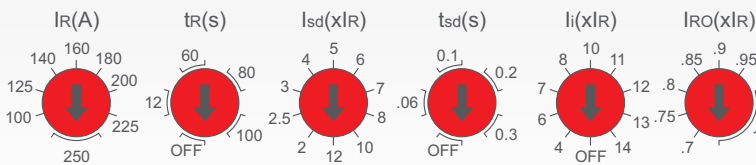
YCM7E-125, In=125A



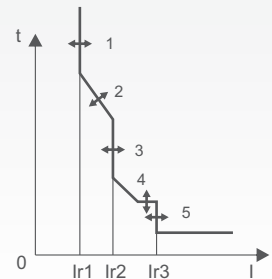
Characteristic curve



YCM7E-250, In=250A



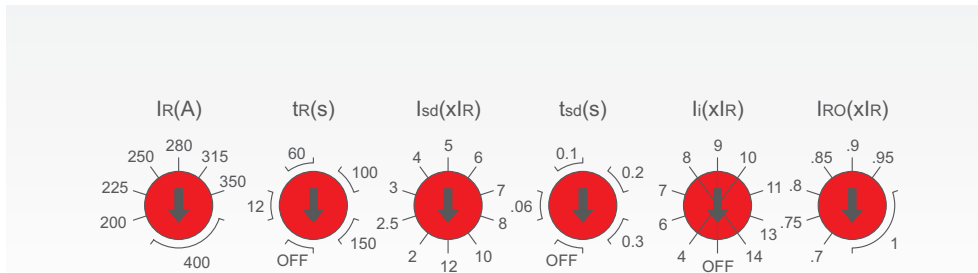
Characteristic curve



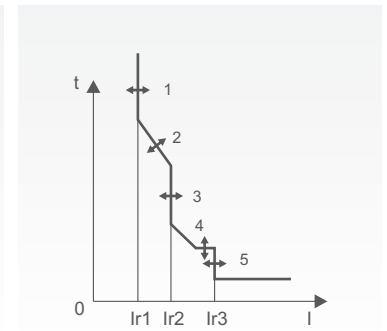
# YCM7E

Electronic moulded case circuit breaker

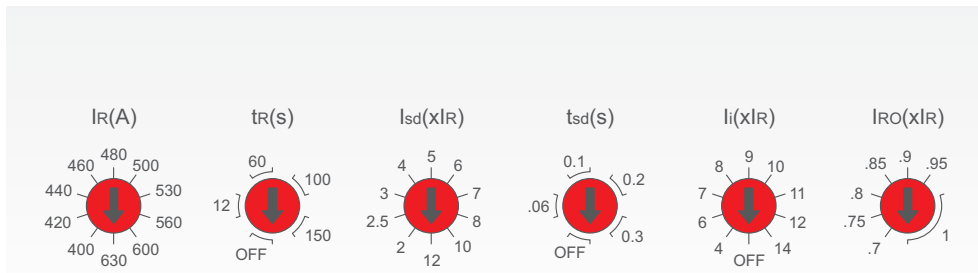
## YCM7E-400, In=400A



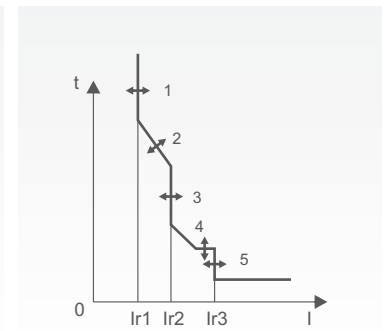
## Characteristic curve



## YCM7E-630, In=630A



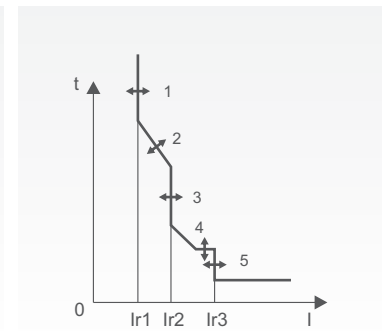
## Characteristic curve



## YCM7E-800, In=800A



## Characteristic curve



## Protection

1. Overload long delay action current Ir1 adjustment, according to the different rated current of the circuit breaker, can be adjusted from 4 to 10;
2. Long delay action time t1 adjustment, can be adjusted for 4 levels;
3. Short-circuit short-delay action current Ir2 adjustment, can be adjusted for 10 levels;
4. Short delay action time t2 adjustment, can be adjusted for 4 levels;
5. Short-circuit instantaneous action current Ir3 adjustment, can be adjusted for 8, 9 or 10 levels;
6. Forecast alarm action current IRO adjustment, can be adjusted for 7 levels.

## ▼ Electronic release characteristic

### Long delay overcurrent protection inverse time action characteristics

Current		Action time								
Distribution	1.05I <sub>r1</sub>	No action within 2 hours								
	1.3I <sub>r1</sub>	≤1h action								
	2I <sub>r1</sub>	Setting time t <sub>1</sub> (s)	I <sub>nm</sub> =125, 250A				I <sub>nm</sub> =400, 630, 800A			
			12	60	80	100	12	60	100	150
Motor protection	1.05I <sub>r1</sub>	No action within 2 hours								
	1.2I <sub>r1</sub>	≤1h action								
	1.5I <sub>r1</sub>	Action time T <sub>1</sub> (s)	I <sub>nm</sub> =125, 250A				I <sub>nm</sub> =400, 630, 800A			
			21.3	107	142	178	21.3	107	178	267
	2I <sub>r1</sub>		12	60	80	100	12	60	100	150
	7.2I <sub>r1</sub>		0.93	4.63	6.17	7.72	0.93	4.63	7.72	11.6
	Release class	-	10	10	20	-	10	20	30	

Note: 1. The operation time conforms to  $T=(2 \times I_r1/I)^2 \times t1(1.2I_r1 \leq I \leq I_r2)$ ;

2. Operation time tolerance is ±20%; 3. The return time is not less than 70% of the action time.

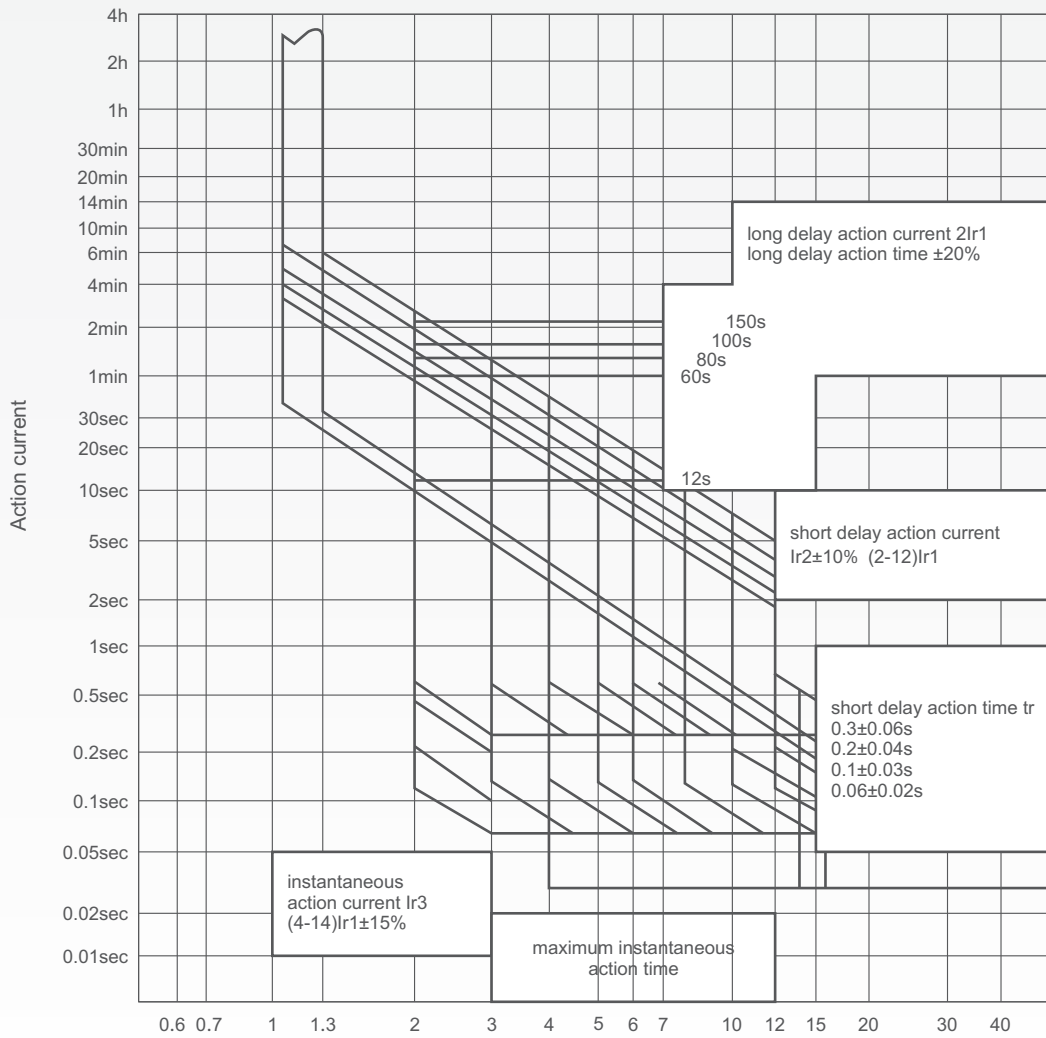
### Short delay overcurrent protection characteristics

Current		Action time				
I <sub>r2</sub> ≤ I < 1.5I <sub>r2</sub>	Inverse time				I <sup>2</sup> T <sub>2</sub> =(1.5I <sub>r2</sub> ) <sup>2</sup> t <sub>2</sub>	
1.5I <sub>r2</sub> ≤ I < I <sub>r3</sub>	Fixed time	Setting time t <sub>2</sub> (s)	0.06	0.1	0.2	0.3
		Tolerance(s)	±0.02	0.03	±0.04	±0.06
		Returnable time(s)			0.14	0.21

Note: Inverse time tolerance is ±20%.

## ▼ Electronic release characteristic

With overload long delay inverse time, short circuit short delay inverse time, short circuit short delay fixed time, short circuit instantaneous action and other protection functions, can be set by the user to form the required protection characteristics; Neutral line overcurrent protection current and time parameters 100% automatic tracking phase line setting. The release characteristic is shown in the following figure.

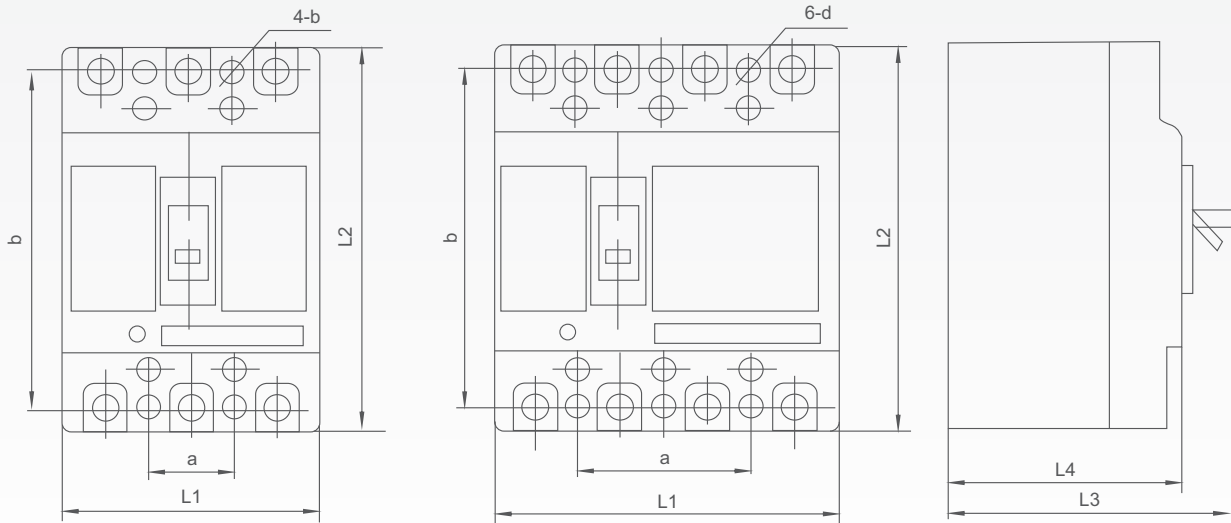




# YCM7E

Electronic moulded case circuit breaker

## ▼ Overall and mounting dimensions(mm)



Model	Pole	Overall size				Installation size		
		L1	L2	L3	L4	a	b	d
YCM7E-125	3	92	150	110	93	30	129	Φ4.5
	4	122	150	110	93	60	129	Φ4.5
YCM7E-250	3	107	165	110	92	35	126	Φ4.5
	4	142	165	110	92	70	126	Φ4.5
YCM7E-400	3	150	258	146	109	44	194	Φ7
	4	198	258	146	109	94	194	Φ7
YCM7E-630 (Capacity-increase type)	3	150	258	146	109	44	194	Φ7
	4	198	258	146	109	94	194	Φ7
YCM7E-630 YCM7E-800	3	210	281	155	116	70	243	Φ7
	4	280	281	155	116	140	243	Φ7

## ▼ Order instruction

- Customers need to indicate the model, specifications and functional requirements when ordering, if the selection data is not involved in the technical requirements, please contact the company's sales staff.  
For example: to order YCM7E series 400 shell frame; 3 poles; Breaking: M type;  
Release method: electronic release, with auxiliary contact and shunt communication function; Rated current: 400A; AC220V; Quantity 100pcs.
- Order model: YCM7E-400M/3340H 400A AC220V 100pcs.