YCM3T/A

YCM3RT

YCM3E

General

YCM3 Series moulded case circuit breaker, is new products, with small compact, modular, high break, double breakpoints, zero arcing, green environmental protection. Suitable for AC 50Hz, 60Hz, rated operating voltage 690V and below, rated current 12.5A to 1600A distribution network, used to distribute electrical energy and protection lines and power supply equipment from overload, short circuit and undervoltage failure hazards. It can also be used as a non-frequent conversion of the line under normal conditions and in the infrequent start of the motor.

YCM3 circuit breaker equips with intelligent controller as well, which not only makes its current adjustable but also grants protection against overload(long delay), short-circuit(short delay), short-circuit(instantaneous) & undervoltage. It'll certainly improve the entire power system's reliability, continuity & security. RS485 interface,MODBUS-RTU protocol.With MODBUS modul equipped,customers can choose options as below. Remote signal: Switching ON/OFF, tripping, alarm & malfunctional singal indication.

Remote control: Switching ON/OFF,reset.Remote test: 3-phase cuttent & N-pole current, grounding current. Remote adjustment: accept and execute remote command to debug remote control .Tripping unit memory recording function, last three time' tripping records can be well traced. YCM3 circuit breaker also obtains isolation function(Can be used as an alternative load switch).

Standard: IEC 60947-2.

Operating conditions

1. The altitude of the installation site does not exceed 2000m;
2. The YCM3 thermomagmetic type with temperature of the surrounding medium is -5°C~ +40°C, and the average temperature of 24 h is not more than +35°C. The relative humidity of the air at the installation site does not exceed 50% at a maximum temperature of +40°C; at lower temperatures, there may be a higher relative humidity; the average minimum temperature of the wettest month does not exceed +25°C for the average of the month The maximum relative humidity is not more than 90%, and the condensation on the surface of the product due to temperature changes is considered.
3. YCM3 intellgent type with temperature of the surrounding medium is -40°C~+80°C.
4. The product is used in non-explosive hazardous media, and the media does not have enough to corrde metals and destroy insulating gases and conductve dust.
5. In places where there is rain protection and no water vapor.
6. The installation category is Class lll.
7. The pollution level is level 3.
8. The basic installation of the circuit breaker is vertical (ie vertical) or horizontal (ie horizontal).
9. The incoming line is either the up line or the down line.
10. Circuit breakers can be divided into fixed and plug-in types.

YCM3Y

YCM3Y
With communication

YCM3LE
With residual current module

Type designation

YC M 3 □ □ □ □

- Number of poles：3 for 3P、4 for 4P
- Breaking capacity code:
  N:Standard;H:High Breaking type
- Frame size current:
  100, 160, 250, 400, 630, 1600
- Release type code:
  MA:Single magnetic
  T/A : overload adjustable
  RT: Overload+short circuit adjustable
  E : Electronic(2.0E,3.0E)
  Y: LCD intelligent electronic
  YV: Voltage measurement type
  YP:Power measurement
  LE: Earth leakage type
- Design sequence number
- MCCB
- Company code

Note：
Other requirements at the time of ordering are subject to textual instructions.

Release:

The type of stripper is divided into: thermal magnetic stripper and Intelligent stripper
1. Thermal magnetic stripper is divided into types according to protection type Distribution Protection Code: TM; Motor (single-magnetic) protection Code: MA.
2. Intelligent stripper According to the function is divided into three kinds:
ordinary type, liquid crystal type and with voltage detection type.

B

Circuit breaker protection settings are shown in table 1

Table 1

Type of Stripper	Type	Overload long delay setting current(IR)	Overload long delay (6·IN) Fix buckle time	Short-circuit shorter delay tuning current (ISD)	Short-circuit shorter delay setting time (TSD)	Short-circuit transient tuning current (Ii)	Grounding Protection setting current (IG)	Grounding Protection setting time (TG)
MA: Single magnetic	YCM3MA-100 YCM3MA-160 YCM3MA-250 YCM3MA-400 YCM3MA-630	/	/	/	/	12In	/	/
T/A: Overload adjustable	YCM3T/A-100 YCM3T/A-160 YCM3T/A-250	(0.8~1)In	/	/	/	10In	/	/
RT:Overload+short circuit adjustable	YCM3RT-250 (200~250A)	(0.8~1)In	/	/	/	(5~10)In	/	/
	YCM3RT-400 YCM3RT-630	(0.7~1)In						
E(2.0E): Electronic 2.0E	YCM3E-100 2.0E YCM3E-160 2.0E YCM3E-250 2.0E YCM3E-400 2.0E YCM3E-630 2.0E	(0.4~1)In	/	(1.5~10)Ir	/	12In	/	/
	YCM3E-1250 2.0E YCM3E-1600 2.0E	(0.4~1)In	0.5~24s	(1.5~10)Ir		12In		
E(3.0E): Electronic 3.0E	YCM3E-100 3.0E YCM3E-160 3.0E YCM3E-250 3.0E YCM3E-400 3.0E YCM3E-630 3.0E	(0.4~1)In	0.5~12s	(1.5~12)Ir	0.1s~0.4s	(2~15)In	(20%~100%)In	/
	YCM3E-1250 3.0E YCM3E-1600 3.0E	(0.4~1)In	0.5~24s	(1.5~10)Ir	0.1s~0.4s	(2~15)In	Optional	/
Y:LCD display, Current type YV:LCD display, Voltage type YP:LCD display, Power type	YCM3Y(YV、YP)-100 YCM3Y(YV、YP)-160 YCM3Y(YV、YP)-250 YCM3Y(YV、YP)-400 YCM3Y(YV、YP)-630	(0.4~1)In	0.5~12s	(1.5~12)Ir	0s~0.4s	(2~15)In	(20%~100%)In	0s~0.4s
	YCM3Y(YV、YP)-1250 YCM3Y(YV、YP)-1600	(0.4~1)In	0.5~24s	(1.5~12)Ir	0s~0.4s	(2~15)In	(20%~100%)In	0s~0.4s

Distribution Apparatus
YCM3 Series MCCB

B

YCM3 parameter measurement function is shown in table 2

Table 2

function type	functional category	Specific functions	Monomagnetic	Thermomagnetic		Electronic				
			MA	T/A	RT	2.0E	3.0E	Y	YV	YP
Protection function	Current (A)	overload protection	/	■	■	■	■	■	■	■
		Short circuit short time delay protection	/	/	/	■	■	■	■	■
		Instantaneous protection	■	■	■	■	■	■	■	■
		Overload warning	/	/	/	■	■	■	■	■
		Neutral line protection	□	□	□	□	□	□	□	□
		Grounding protection	/	/	/	/	/	■	■	■
		Current imbalance protection	/	/	/	/	/	/	■	■
	Voltage(v)	Zero break protection	/	/	/	/	/	/	■	■
		Voltage imbalance protection	/	/	/	/	/	/	■	■
		Overfrequency and underfrequency protection	/	/	/	/	/	/	■	■
		Phase sequence protection	/	/	/	/	/	/	■	■
Measurement function	Current (A)	Phase current	/	/	/	/	/	■	■	■
		Neutral current	/	/	/	/	/	□	□	□
		Percentage of ground faults	/	/	/	/	/	/	■	■
		Current imbalance rate of each phase	/	/	/	/	/	/	■	■
	Voltage(V)	Line voltage	/	/	/	/	/	/	■	■
		Phase voltage	/	/	/	/	/	/	■	■
		Average line voltage	/	/	/	/	/	/	■	■
		Average phase voltage	/	/	/	/	/	/	■	■
		Voltage imbalance rate	/	/	/	/	/	/	■	■
		phase sequence	/	/	/	/	/	/	■	■
		frequency	/	/	/	/	/	/	■	■
	Power	Meritorious	/	/	/	/	/	/	/	■
		Reactive power	/	/	/	/	/	/	/	■
		Apparent	/	/	/	/	/	/	/	■
		Power factor and	/	/	/	/	/	/	/	■
	Quantity of electricity	Active, reactive, apparent	/	/	/	/	/	/	/	■
Maintenance function	Accumulated function	Various types of protection tripping times, displacement times, etc	/	/	/	/	/	/	■	■
	Event recording	Trip records, alarm records, displacement records, etc	/	/	/	/	/	/	■	■
	Contact wear	Contact wear record	/	/	/	/	/	/	■	■
	Number of operations	Record of operation times	/	/	/	/	/	/	■	■
	RTC function	Real time clock	/	/	/	/	/	/	■	■
	Auxiliary/alarm detection function	Auxiliary, alarm detection, and display of circuit breaker status	/	/	/	/	/	/	□	□
	Electric operation control function	Remote electric operation control function	/	/	/	/	/	/	■	■
	human-computer interaction	LED indication	/	/	/	/	/	■	■	■
		LCD display	/	/	/	/	/	■	■	■
		Key settings	/	/	/	/	/	■	■	■
	communication function	Moedbus RTU DL/T645	/	/	/	/	/	□	■	■

■ Have □ Optional / Without this feature

Technical data

1.The basic parameters of the circuit breaker are shown in Table 2.

2.The overload delay and short-circuit transient protection action characteristics of the circuit breaker are shown in Table 4 and Table 3.

Table 2

Type		YCM3-100		YCM3-160		YCM3-250	
Number of poles		3P, 4P		3P, 4P		3P, 4P	
Shell frame maximum rated current Inm(A)		100		160		250	
Rated current In(A)		12.5/16/20 25/32/40 50/63/80/100	100	16/20/25/32 40/50/63/80 100/125/160	160	100/160/180 200/225/250	250
Type of Stripper		Thermal or single-magnetic	Intelligent type	Thermal or single-magnetic	Intelligent type	Thermal or single-magnetic	Intelligent type
Rated insulation voltage Ui(V)		800		800		800	
Rated impulse withstand voltage Uimp(kV)		8		8		8	
Rated voltage Ue(V)50-60Hz		AC415/500/690		AC415/500/690		AC415/500/690	
Flying arc Distance(mm)		0		0		0	
Short circuit breaking capability level		N	H	N	H	N	H
Rated limit Short circuit Breaking capacity Icu(kA)	AC415V	50	85	50	85	50	85
	AC500V	35	50	50	60	50	60
	AC690V	6	6	6	6	6	6
Rated running short circuit Breaking capacity Ics(kA)	AC415V	75% Icu					
	AC500V						
	AC690V						
Rated short time resistant current Icw(kA) (1s)		/	3	/	3	/	3
Working with categories		A		A		A	
Remaining Current protection		Additional Residual current protection module (See P78-79 LE remaining current module for specific parameters)					
Electrical Life Test	AC415V	10000	10000	8000	8000	8000	8000
	AC690V	1500	1500	1500	1500	1500	1500
Number of mechanical life		20000	20000	20000	20000	20000	20000
Dimensions	Wide(3P/4P)	105/140		105/140		105/140	
	Long	161		161		161	
	High	86		86		86	
Mode of operation		Manual Direct operation、Rotate handle operation、Electric operating mechanism					
Mounting method		Fixed type(front of plate)、Fixed type(rear of plate)、Plug-in(front of plate)、Plug-in(rear of plate)					

Renew Table 3

Type		YCM3-400		YCM3-630		YCM3-1600	
Number of poles		3P, 4P		3P, 4P		3P, 4P	
Shell frame maximum rated current Inm(A)		400		630		1600	
Rated current In(A)		250/315/ 350/400	400	400/500/ 600/630	630	800/1000/1250/1600	
Type of Stripper		Thermal or single-magnetic	Intelligent type	Thermal or single-magnetic	Intelligent type	Intelligent type	
Rated insulation voltage Ui(V)		1000		1000		1000	
Rated impulse withstand voltage Uimp(kV)		8		8		8	
Rated voltage Ue(V)50-60Hz		AC415/500/690		AC415/500/690		AC415/500/690	
Flying arc Distance(mm)		0		0		0	
Short circuit breaking capability level		N	H	N	H	N	
Rated limit Short circuitBreaking capacity Icu(kA)	AC415V	50	85	50	85	50	
	AC500V	30	50	35	50	35	
	AC690V	10	15	10	100	20	
Rated running short circuit Breaking capacity Ics(kA)	AC415V	75% Icu					
	AC500V						
	AC690V						
Rated short time resistant current ICW (kA) (1s)		/	5	/	8	8	
Working with categories		A	B	A	B	B	
Remaining Current protection		Additional Residual current protection module (See P78-79 LE remaining current module for specific parameters)					
Electrical Life Test	AC415V	6000	6000	5000	5000	1500	
	AC690V	1000	1000	1000	1000	1000	1000
Number of mechanical life		10000	10000	10000	10000	10000	10000
Dimensions	Wide(3P/4P)	140/185		140/185		210/280	
	Long	255		255		327	
	High	110		110		147	
Mode of operation		Manual Direct operation、Rotate handle operation、Electric operating mechanism					
Mounting method		Fixed type(front of plate)、Fixed type(rear of plate)、Plug-in(front of plate)、Plug-in(rear of plate)					

Table 4

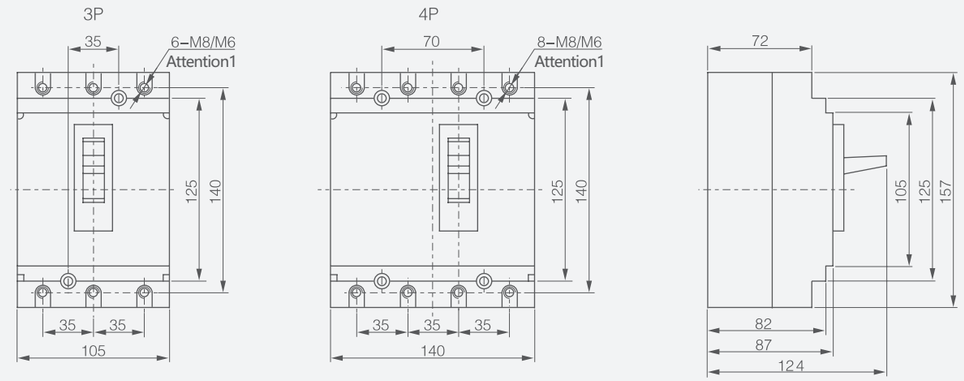
Serial number	Distribution breaker				Circumstance temperature
	Test current(times)		Tripping time	Status	
1	1.05In		1h non-tripping (In≤63A) 2h non-tripping (In>63A)	Initial	-40℃±2℃
2	1.3In		1h tripping (In≤63A) 2h tripping (In>63A)	Following serial 1	
3	10In±20%	8In	> 0.2s Tripping	Initial	Any suitable temperature
4		12In	≤ 0.2s Tripping		

Technical data

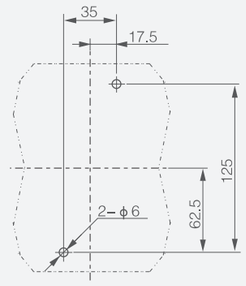
Table 5

Serial number	Motor protection breaker				Circumstance temperature
	Testing current(times)		Tripping time	State	
1	1.05In		2h non-tripping	Initial	-40℃±2℃
2	1.2In		2h tripping	Following serial 1	
3	1.5In		4min tripping	The order 1 current reaches the thermal equilibrium and begins	
4	7.2In		2~10s Tripping	Initial	
5	12In±20%	9.6In	> 0.2s Tripping	Initial	Any suitable temperature
6		14.4In	≤ 0.2s Tripping		

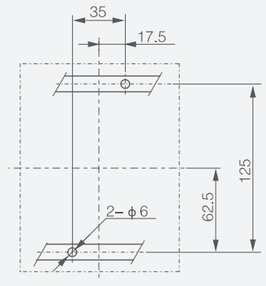
YCM3-100、160、250 Overall and mounting dimensions(mm)



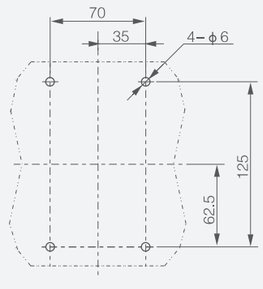
Attention1: when in>100A,Fixing screw size should be M8 ,When In ≤100A, fixing screw size should be M6.



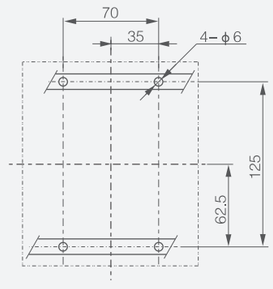
3P : Installed on the panel



3P : Installed on leading rails



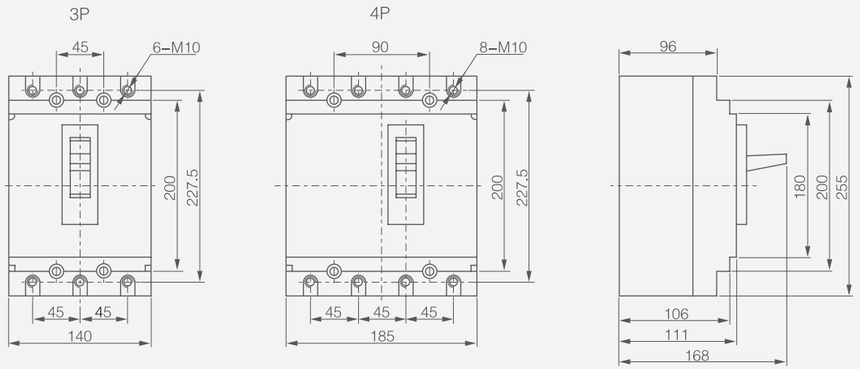
4P : Installed on the panel

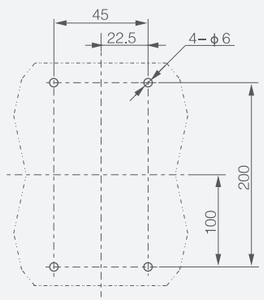


4P : Installed on leading rails

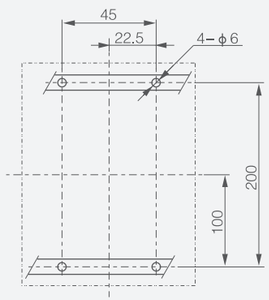
B

YCM3-400、630 Overall and mounting dimensions(mm)

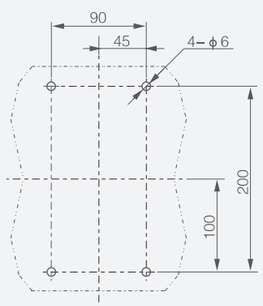




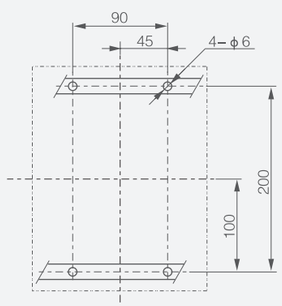
3P : Installed on the panel



3P : Installed on leading rails



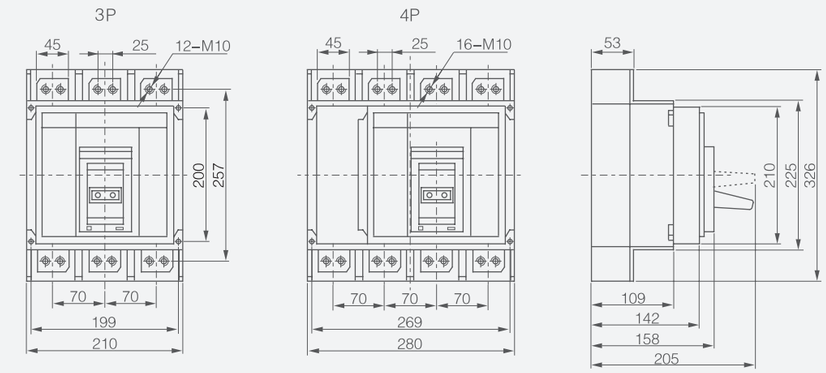
4P : Installed on the panel

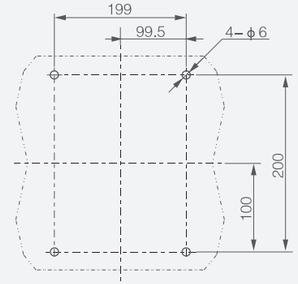


4P : Installed on leading rails

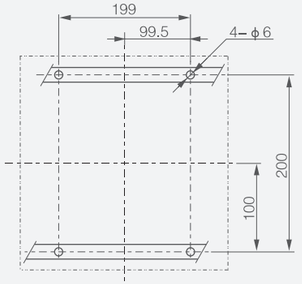
B

YCM3-1600 Overall and mounting dimensions(mm)

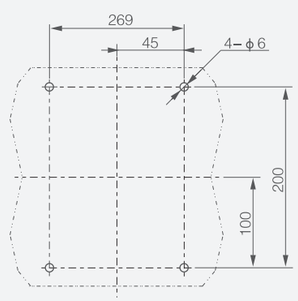




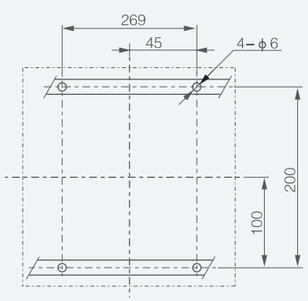
3P : Installed on the panel



3P : Installed on leading rails



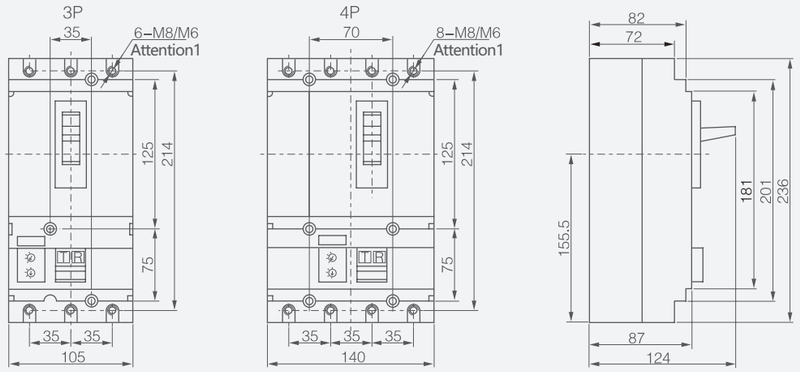
4P : Installed on the panel



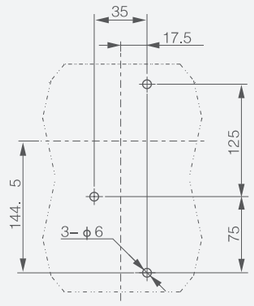
4P : Installed on leading rails

B

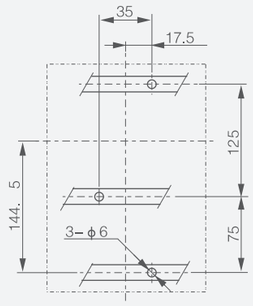
YCM3-100、160、250 (with residual current module) Overall and mounting dimensions(mm)



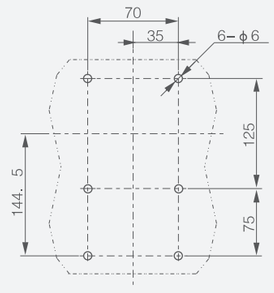
Attention1: when in>100A,Fixing screw size should be M8 ,When In ≤100A, fixing screw size should be M6.



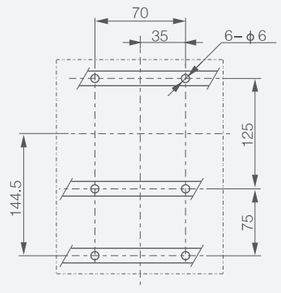
3P : Installed on the panel



3P : Installed on leading rails



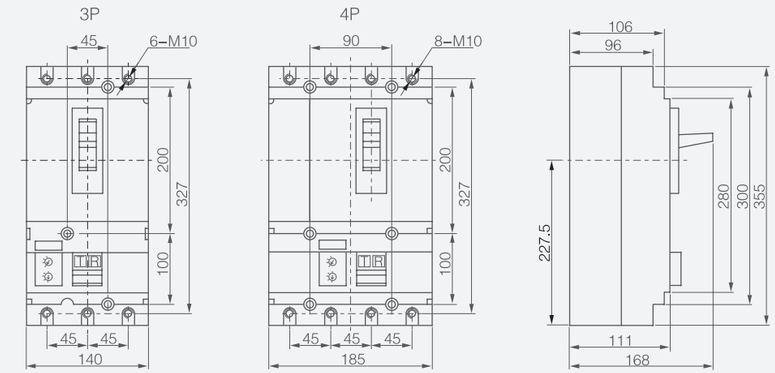
4P : Installed on the panel

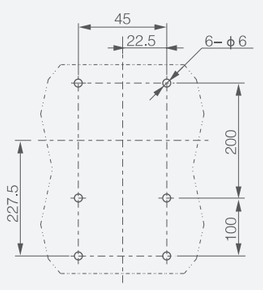


4P : Installed on leading rails

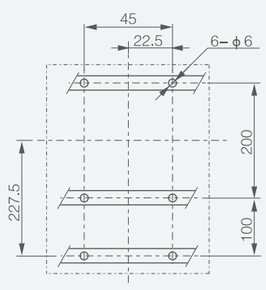
B

YCM3-400、630 (with residual current module) Overall and mounting dimensions(mm)

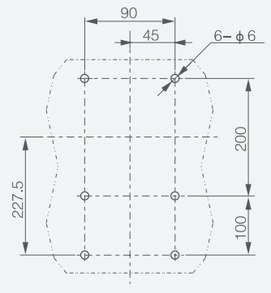




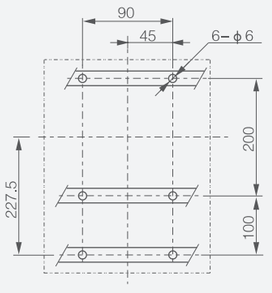
3P : Installed on the panel



3P : Installed on leading rails



4P : Installed on the panel



4P : Installed on leading rails

B

LE Residual current Action Protection device module (Leakage protection module)

Provides leakage protection for all three-pole or four-pole YCM3-100 to 630 circuit breakers. The circuit breaker with LE residual current protection module realizes the leakage protection function under the premise of maintaining the overall characteristics of the circuit breaker, and the LE module can directly act on the stripping unit.

Remote indication：
The LE module can be fitted with an auxiliary contact ,which can remotely transmit the buckle caused by leakage fault.
Power：
The LE module can be powered by the power distribution system itself, eliminating the need for any external power supply. It can continue to operate even with AC two-phase power supply.

Type designation

LE - □ □ / □

- 1:100 ; 2:160 ; 3:250 ; 4:400 ; 5:630
- 3:3 poles ; 4:poles
- ME ; MH ; MB See the selection table for details
- Residual Current Action Protector

Note: LE modules can not be sold separately.

Selection of LE modules

Model	LE-ME	LE-MH	LE-MB
Polar number	3、4(1)	3、4(1)	3、4(1)
YCM3-100	Yes	Yes	No
YCM3-160	Yes	Yes	No
YCM3-250	No	Yes	Yes
YCM3-400	No	No	Yes
YCM3-630	No	No	Yes
Protective features			
Sensitivity IΔn(A)	Fixed 0.36	Adjustable 0.03-0.3-1-3-10	Adjustable 0.03-0.3-1-3-10
Whether the delay is adjustable	Fixed	Adjustable	Adjustable
Delay settings	<40	0-60(2)-150(2)-310(2)	0-60-150-310
Maximum break time(ms)	<40	<40<140<300<800	<40<140<300<800
Rated voltage AC50V/60Hz	200...440	200...440-440...500	200...440-440...500

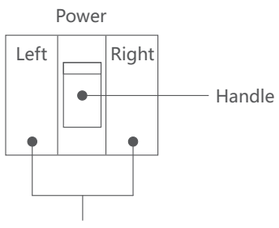
If the sensitivity is set to 30mA, the stripper is instantaneous clasp.

B

Inner accessories

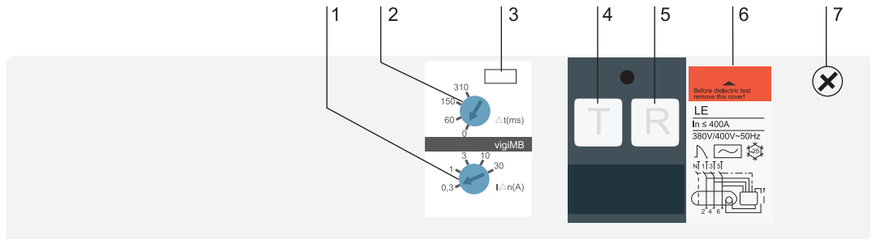
Accessories of YCM3 are the same.

Model		YCM3-100	YCM3-160	YCM3-250	YCM3-630	YCM3-1250
No. of poles		3, 4	3, 4	3, 4	3, 4	3, 4
Code	Accessory name					
208, 308	Alarm contact	●	●	●	●	●
210, 310	Shunt release	□	□	□	□	□
220, 320	Auxiliary switch	○	○	○	○	○
230, 330	Undervoltage release	■	■	■	■	■
240, 340	Shunt release, auxiliary switch	○ □	○ □	○ □	○ □	○ □
260, 360	Two groups of auxiliary switch	○ ○	○ ○	○ ○	○○	○ ○
270, 370	Auxiliary switch, undervoltage release	○ ■	○ ■	○ ■	○ ■	○ ■
218, 318	Shunt release, alarm switch	● □	● □	● □	● □	● □
228, 328	Auxiliary switch, alarm switch	○●	○●	○●	○ ●	○ ●
238, 338	Undervoltage release, alarm switch	● ■	● ■	● ■	● ■	● ■
248, 348	Shunt release, auxiliary switch, alarm switch	○● □	○● □	○● □	○ ● □	○ ● □
268, 368	Two groups of auxiliary switch, alarm switch	○● ○	○● ○	○● ○	○○ ●	○ ○ ●
278, 378	Auxiliary switch, undervoltage release, alarm switch	○● ■	○● ■	○● ■	○ ● ■	○ ○ ● ■
280, 380	Two groups of auxiliary switch, shunt release	○ ○ □	○ ○ □	○ ○ □	○○ □	○ ○ □



The blank area cannot
be equipped with accessory

● Alarm switch ○ Auxiliary switch □ Shunt release ■ Undervoltage release



1.Sensitivity setting
2.Delay setting(for selective leakage protection)
3.Calibration of the seal Sleeve
4.Test button-used to simulate leakage failure, to periodically check leakage protection function
5.Reset button(after leakage fault buckle must be reset)
6.Nameplate
7.Location of secondary contacts

Operational safety

LE Modular A user-friendly device that requires regular testing by the user
(tested every 6 months)

Accessories

The internal accessories of the circuit breaker are installed in the inner cavity of the cover plate, and the shunt release, undervoltage release, auxiliary contact and alarm contact are all made into separate modules. Therefore, the installation is simple, convenient, safe and reliable, and the user can install the corresponding position of the circuit breaker by himself. The attached picture is as follows:

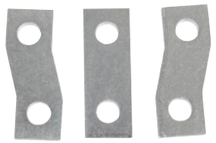
Accesspry name	Rated operating voltage	Applicable shell frame
 MX Shunt release 	AC220/230V AC380/400V DC220V DC110V	YCM3-100 YCM3-160 YCM3-250 YCM3-400 YCM3-630
	AC220/230V AC380/400V DC220V DC110V	YCM3-1600
 MU Undervoltage release 	AC220/230V AC380/400V	YCM3-100 YCM3-160 YCM3-250 YCM3-400 YCM3-630
	AC220/230V AC380/400V	YCM3-1600

Accessory name	Rated operating voltage	Applicable shell frame
 AX Auxiliary contact	AC220/230V AC380/400V DC220V DC110V	All shells
 AL Alarm contact	AC220/230V AC380/400V DC220V DC110V	All shells
 LE Remaining Current protection module	Sensitivity IΔn(A) adjustable range 0.03,0.3,1,3,10. Note: The circuit breaker can be provided as needed by the user. Only the alarm does not trip.	YCM3-100 YCM3-160 YCM3-250
		YCM3-400 YCM3-630
 P Electric operating mechanism	AC220/230V AC380/400V DC220V DC110V	YCM3-100 YCM3-160 YCM3-250
 P Electric operating mechanism	AC220/230V AC380/400V DC220V DC110V	YCM3-400 YCM3-630

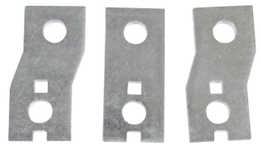
Accessory name	Applicable shell frame
 Economical extended rotating handle	YCM3-100 YCM3-160 YCM3-250 YCM3-400 YCM3-630
 Extended rotating handle	YCM3-100 YCM3-160 YCM3-250 YCM3-400 YCM3-630 YCM3-1600

B

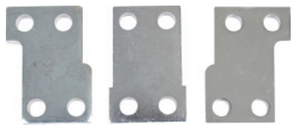
Circuit breaker accessories



1.YCM3-100、160、200
Outer connecting plate



2.YCM3-400、630
Outer connecting plate

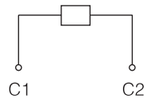


3.YCM3-1600
Outer connecting plate

Note: Thermomagnetic and electronic dimensions, mounting dimensions and accessories are identical.

Shunt release

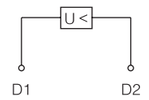
For remote control of the circuit breaker opening, the shunt release can reliably open the circuit breaker between 70% and 110% US. The shunt release should be prohibited from being energized for a long time(≤ 5s).



Coupling coil

Undervoltage release

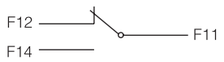
When the control voltage drops to 35% to 70%, the undervoltage release should trip and the circuit breaker should be reliably disconnected. When the control voltage is greater than or equal to 85%, the circuit breaker should be reliably closed. When the control voltage is less than 35%, it should be able to prevent the circuit breaker from closing.



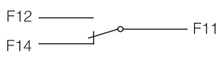
Coupling coil

Auxiliary contact

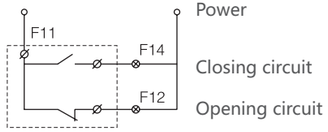
Function: Indicates the opening and closing state of the circuit breaker.



When the circuit breaker is in the opening position



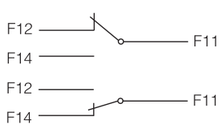
When the circuit breaker is in the closing position

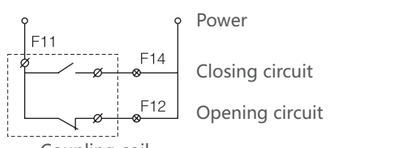


Coupling coil

Alarm contact

Function: Indicates the possible cause of tripping of the circuit breaker
a: overload ; b: short circuit ; c: ground fault ; d: undervoltage trip operation ; e: free trip.
When the circuit breaker is normally closed or opened, the alarm contact does not move, and only after the trip or fault trip occurs, The position of the contact changes, that is, the normally open becomes normally closed, and the normally closed becomes normally open. When the circuit breaker is buckled again, the alarm contact returns to its original position.

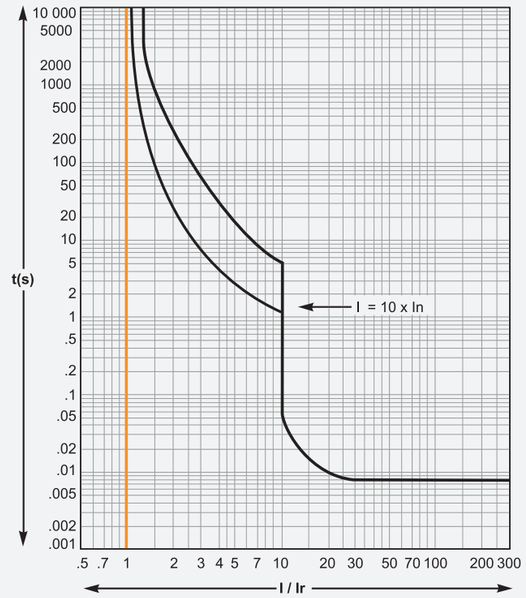




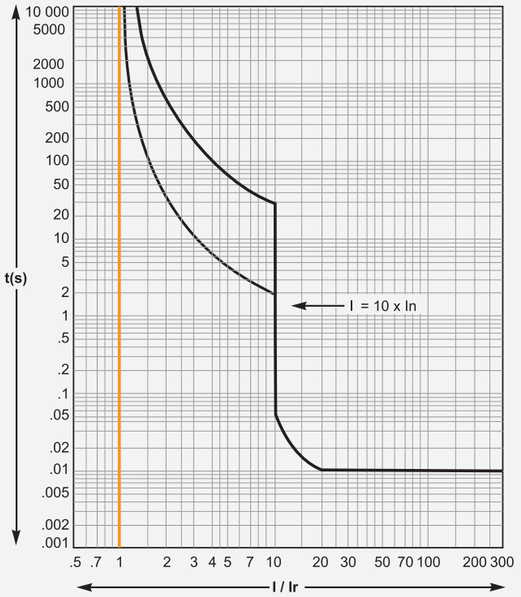
Coupling coil

B

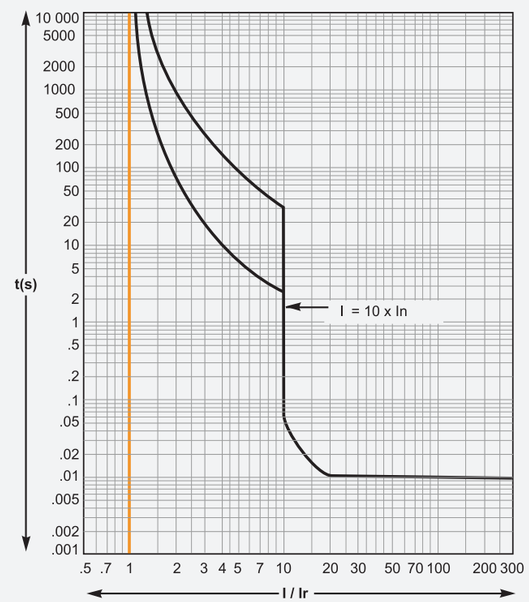
TM12.5A-50A



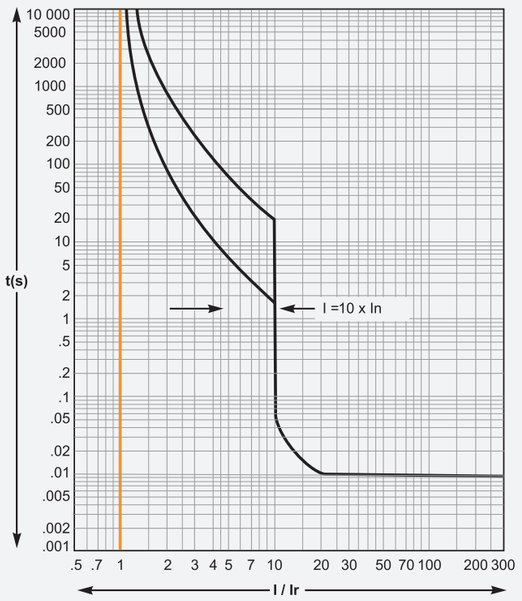
TM63A-100A



TM125A-250A



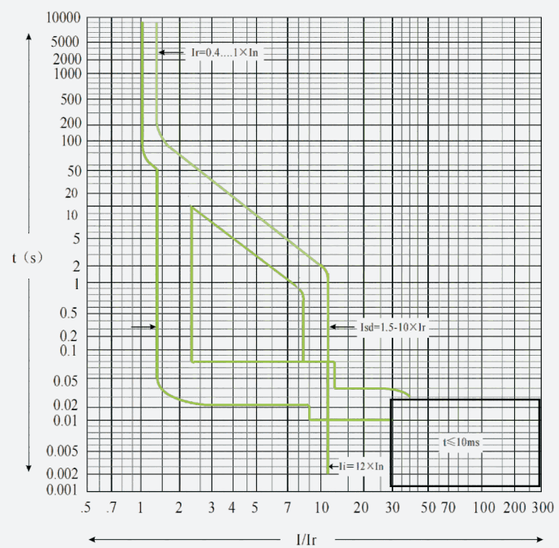
TM315A-600A



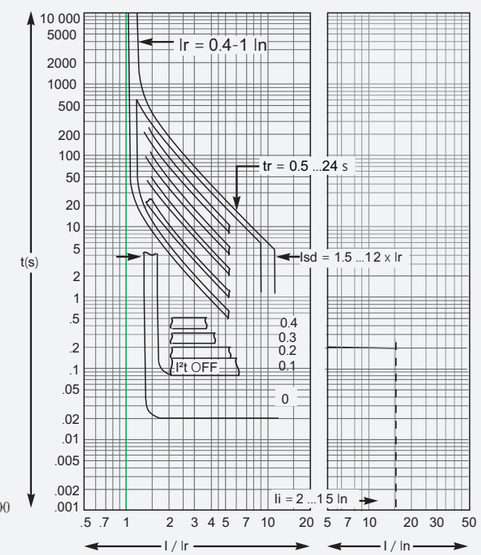
YCM3 Series MCCB

B

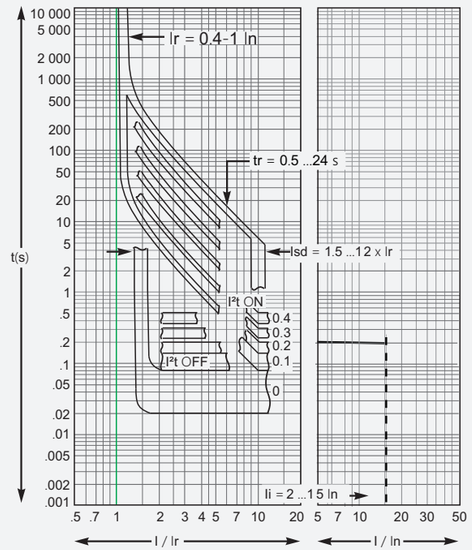
YCM3E electronic (2.0)100-630A



Micrologic 5.0 Tripping curve In100 - 630 A



Micrologic 6.0 tripping curve In100-630 A



(Earth fault protection)