YCM3 series

Moulded Case Circuit Breaker
Instructions

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.

YCM3 series
Moulded Case Circuit Breaker Instructions

1 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 themotor.
YCM3 circuit breaker equips with intelligent controller as well, which not only makes its current adjustable but also grants protection against overload (long delay), shortcircuit (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.

2 Operating conditions

2.1 The altitude of the installation site does not exceed 2000m;
2.2 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.

2.3 YCM3 intellgent type with temperature of the surrounding medium is -40°C~+80°C.

2.4 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.

2.5 In places where there is rain protection and no water vapor.

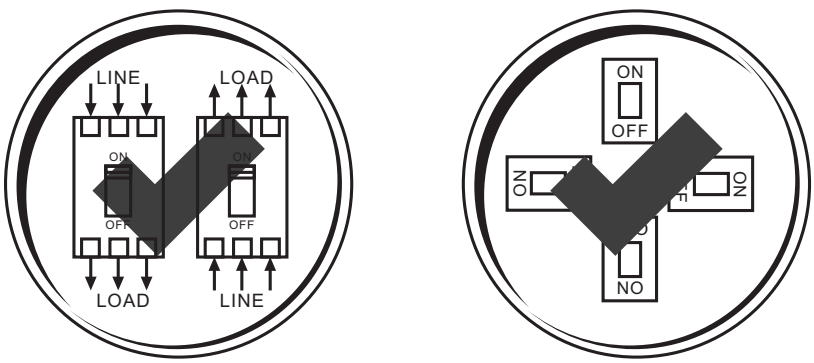
2.6 The installation category is Class lll.

2.7 The pollution level is level 3.

2.8 The basic installation of the circuit breaker is vertical (ie vertical) or horizontal (ie horizontal).

2.9 The incoming line is either the up line or the down line.

2.10 Circuit breakers can be divided into fixed and plug-in types.



Mode of mounting

3 Structure

3.1 Circuit breaker body and accessories:

The YCM3-250S/3P/4P-5.0A circuit breaker is composed of four parts: an insulating enclosure, an operating mechanism, a contact system (including an arc extinguishing device) and a trip unit. It has a quick closing and open mechanism and a free tripping mechanism.

The trip unit consists of an electromagnetic trip unit with instantaneous action, a thermal trip unit with a delay (inverse time) action, and an intelligent trip unit. The circuit breaker has internal accessories such as auxiliary contacts, alarm

contacts, shunt releases, and under-voltage releases, as well as external accessories such as external rotary operating handles, motor-driven mechanism, mechanical locks, and terminal covers. The under-voltage release is used for under-voltage protection of the circuit and the motor; the shunt release is used for remotely control of the circuit breaker; the motor-driven mechanism is used for remote close and open of the circuit breaker.

The extended rotary handle is used to operate outside the switch cabinet door. It has the function of "interlocking" with the cabinet door.

Auxiliary contacts will operate correspondingly with the action of the circuit breaker.

After the circuit breaker trips due to a fault, the alarm contact will give a signal alarm (connect to the indicator light or buzzer).

The circuit breaker handle can assume any of three positions, ON, tripped or OFF. The center tripped position provides positive visual indication that the circuit breaker has tripped. The circuit breaker can be reset by first pushing the handle to the extreme "OFF" position. Power can then be restored to the load by pushing the handle to the "ON" position.

3.2 See Table 1 for the standard cross-sectional area of copper wires or copper bars corresponding to the rated current of the circuit breaker.

Table 1

Rated current A		12.5 20	25	32	40 50	63	80	100	125	160	200 225
Cross-sectional area mm^2	Copper wire	2.5	4	6	10	16	25	35	50	70	95
	Copper bar	2.5	4	6	10	16	25	35	50	70	95

Rated current A		250	315 350	400	500	630	1000	1250	1600
Cross-sectional area mm^2	Copper wire	120	185	240	2× 150	2× 185	-	-	-
	Copper bar	120	185	240	2× 150	2× 200	2× 300	2× 400	2× 500

4 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.

Table 2 Accessories Codes

Name / Codes / Release type	No accessories	Alarm contact(AL)	Shunt release(SHT)	SHT+Alarm	Single auxiliary(AX)	AX+Alarm	Under-voltage(UVT)	UVT+Alarm	AX+SHT	SHT+AX+Alarm	Doubel auxiliaries	Double AX+Alarm	UVT+AX	UVT+AX+AlARM
Instantaneous magnetic trip only	200	208	210	218	220	228	230	238	240	248	260	268	270	278
Thermal magnetic trip	300	308	310	318	320	328	330	338	340	348	360	368	370	378
Electronic trip	400	408	410	418	420	428	430	438	440	448	460	468	470	478

5 Technical data

5.1 The basic parameters of the circuit breaker are shown in Table 3.

5.2 The operating characteristics of the circuit breaker's overload long delay and short circuit instantaneous protection are shown in Table 4 and Table 5.

5.3 See Table 6 for the current setting range of the circuit breaker.

Table 3

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 with stand voltage Uimp(kV)		8		8		8	
Rated voltage Ue(V) 50H-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
	AC415V	75% Icu					
	AC500V						
	AC690V						
Working with categories		A		A		A	
Rated short time resistant current Icw(kA) (1s)		/	3	/	3	/	3

Renew Table 3

Type		YCM3-100		YCM3-160		YCM3-250	
Remaining Current protection		Additional Residual current protection module (See P21-23 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	Yes		Yes		Yes	
	Rotate handle operation	Yes		Yes		Yes	
	Electric operating mechanism	Yes		Yes		Yes	
Mounting method	Fixed type (Front of plate)	Yes		Yes		Yes	
	Fixed type (Rear of plate)	Yes		Yes		Yes	
	Plug-in (Front of plate)	Yes		Yes		Yes	
	Plug-in (Rear of plate)	Yes		Yes		Yes	

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	Thermal or single-magnetic	Intelligent type
Rated insulation voltage Ui(V)		1000		1000		1000	
Rated impulse with stand voltage Uimp(kV)		8		8		8	
Rated voltage Ue(V) 50H-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 circuit breaking capacity Icu(kA)	AC415V	50	85	50	85	50	
	AC500V	35	50	30	50	35	
	AC690V	10	15	10	100	20	
	AC415V	75% Icu					
	AC500V						
	AC690V						
Working with categories		A	B	A	B	B	
Rated short time resistant current Icw(kA) (1s)		/	5	/	8	8	
Remaining Current protection		Additional Residual current protection module (See P21-23 LE remaining current module for specific parameters)					
Electrical life test	AC415V	6000	6000	5000	5000	15000	
	AC690V	1000	1000	1000	1000	1000	

Renew Table 3

Type		YCM3-100		YCM3-160		YCM3-250
Number of mechanical life		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	Yes		Yes		Yes
	Rotate handle operation	Yes		Yes		Yes
	Electric operating mechanism	Yes		Yes		Yes
Mounting method	Fixed type (Front of plate)	Yes		Yes		Yes
	Fixed type (Rear of plate)	Yes		Yes		Yes
	Plug-in (Front of plate)	Yes		Yes		Yes
	Plug-in (Rear of plate)	Yes		Yes		Yes

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	

Renew Table 4

Serial number	Distribution breaker				Circumstance temperature
	Test current(times)		Tripping time	Status	
3	10In±20%	8In	>0.2s Tripping	Initial	Any suitable temperature
4		12In	≤0.2s Tripping		

Table 5

Serial number	Motor protection breaker				Circumstance temperature
	Test current(times)		Tripping time	Status	
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		

Table 6

Type	Overload long delay release current value adjustable range Ir (A)	Short-circuit short-delay trip unit current value adjustable range Ir (A)	Short-circuit instantaneous trip unit current value adjustable range Ir (A)	Remarks
YCM3T/A-100	0.8 ~ 1In	-	10In	Thermomagnetic (single adjustable)
YCM3T/A-160	0.8 ~ 1In	-	10In	
YCM3T/A-250	0.8 ~ 1In	-	10In	
YCM3RT-250 (200, 225, 250)	0.8 ~ 1In	0.8 ~ 1In	(5 ~ 10)In	Thermomagnetic (double adjustable)
YCM3E-100	0.4 ~ 1In	(1.5 ~10)Ir	10In	Electronic(2.2)
YCM3E-160	0.4 ~ 1In	(1.5 ~10)Ir	10In	
YCM3E-250	0.4 ~ 1In	(1.5 ~10)Ir	10In	
YCM3Y-100	0.4 ~ 1In	(1.5 ~12)Ir	(2 ~ 15)In	Intelligent LCD display(5.0A)
YCM3Y-160	0.4 ~ 1In	(1.5 ~12)Ir	(2 ~ 15)In	
YCM3Y-250	0.4 ~ 1In	(1.5 ~12)Ir	(2 ~ 15)In	
YCM3RT-400	0.4 ~ 1In	-	(5 ~ 10)In	Thermomagnetic (double adjustable)
YCM3RT-630	0.4 ~ 1In	-	(5 ~ 10)In	
YCM3E-400	0.4 ~ 1In	(1.5 ~10)Ir	10In	Electronic(2.3)
YCM3E-400	0.4 ~ 1In	(2 ~10)Ir	10In	
YCM3E-630	0.4 ~ 1In	(1.5 ~10)Ir	10In	
YCM3E-630	0.4 ~ 1In	(2 ~12)Ir	10In	
YCM3Y-400	0.4 ~ 1In	(1.5 ~12)Ir	(2 ~ 15)In	Intelligent LCD display(5.0A)
YCM3Y-630	0.4 ~ 1In	(1.5 ~12)Ir	(2 ~ 15)In	
YCM3E-1600	0.4 ~ 1In	(1.5 ~10)Ir	10In	Electroni(2.0)c
YCM3Y-1600	0.4 ~ 1In	(1.5 ~12)Ir	(2 ~ 15)In	

Note : Regular products only provide two-segment protection , if the customer needs three protection when the order is indicated in table 6.

6 Operation and precaution

6.1 Please use the appropriate tools

The protection parameter adjustment of the controller is very convenient, please use a small one-piece screwdriver with a blade size of 3x0.6mm, gently insert it into the slot of the encoder adjustment knob, rotate the screwdriver handle to make the arrow of the knob point to required parameter scale, and then the adjustment is finished.

6.2 Precaution

1)When adjusting parameters, avoid the knob arrow pointing to the middle of the two scales.

2)The protection current thresholds for overload, short circuit and instantaneous action cannot be cross-set and ensure IR< Isd< Ii. For example, if Ii < Isd, the short circuit short delay function will fail.

8 Protective features

8.1 Symbol Description

I: Main circuit current

Inm: Frame current

Io: Overload long-delay tripping setting current

Ir: Fine adjustment of overload long-delay tripping setting current

Isd: Short-circuit short-delay tripping setting current

Ii: Short-circuit short instantaneous tripping setting current

9 Overload long-delay protection

Overload long-delay protection is used to prevent the circuit and equipment from overheating when overloaded.

Setting range				
In(A)	Encoder setting		Screen setting or Communication setting (A)	
100	Io	40,45,50,55,63,70,80,90,100	(0.4-1)In, OFF	Step length 1A
160		63,70,80,90,100,110,125,150,160		
250		100,112,125,140,160,175,200,225,250		
400		160,180,200,230,250,280,320,360,400		
630		250,280,320,350,400,450,500,570,630		
800-1600	Ir(×In)	0,4,0.5,0.6,0.7,0.8,0.9,0.95,0.98,1		

Overload long-delay protective feature:

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		

10 Fine adjustment of overload long-delay tripping setting current Ir

Ir setting range	
In(A)	Encoder setting Ir(×Io)
100~630	0.9,0.92,0.93,0.94,0.95,0.96,0.97,0.98,1.0

Tr setting range	Tripping time under current 6Ir
In(A)	Encoder setting tr(s)
800-1600	0.5,1,2,4,8,12,16,20,24

11 Short-circuit short-delay protection

Short-circuit short-delay protection is aimed at short-circuit faults of medium strength and provides selective protection for the distribution system.

Isd setting range			
In(A)	Encoder setting Isd(n×Ir)	Screen setting or Communication setting Isd (n×Ir)	
100~1600	YCM3E n=1.5,2,3,4,5,6,7,8,10	YCM3 (YV,YP) : n=1.5-12	Step length 1

12 Short-circuit instantaneous protection

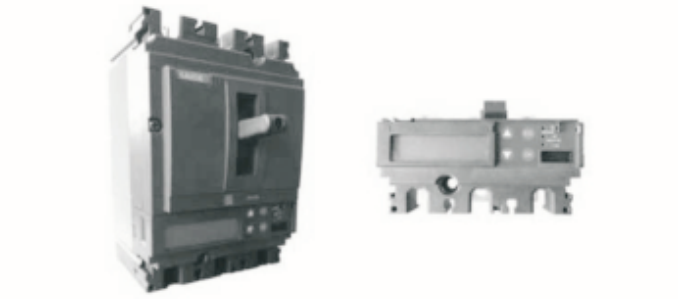
Ii setting range			
In(A)	Encoder setting Ii(n×In)	Screen setting or Communication setting Ii(n×In)	
100~1600	YCM3E fixed value n=10	YCM3 (YV,YP) adjustable n=2-15	Step length 1

13 Overload pre-alarm characteristics

Main circuit current	100,160,250: I>30A; 400,630: I>50A;	I>90%Ir	I>105%Ir	Note
Indicator status	The first green light is on, running indicator	The second yellow light is on, overload pre-alarm indicator	The third red light is on, overload alarm indicator	After the product tripping, all indicators are off; for 800-1600A, the yellow light is on when I>90%Ir, overload pre-alarm indicator;

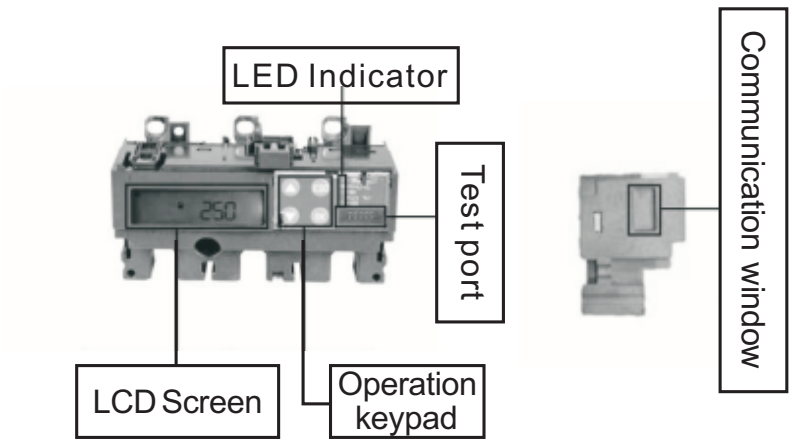
14 YCM3 Smart circuit breaker controller part

14.1 YCM3 Series Electronic LCD Circuit Breaker



The manufacturer will not be held responsible for the adverse consequences caused by operation not in accordance with the requirements of this manual.

14.2 Operation interface



14.3 LED status indicator

Green

Operating status indicator

The green"Ready" LED blinks slowly when the electronic trip unit is ready to provide protection. It indicates the trip unit is operating correctly. A minimum current of 30 to 50 A, depending on the device, is required for this function.(Forsuch ready function, a minimum current 30A for YCM3-250, and 50A for YCM3-400 and YCM3-630)

Yellow

Pre-alarm indicator

The yellow pre-alarm LED is steady on when I > 90% Ir. A minimum current of 30 to50 A, depending on the device, is required for this function.(For such function, a minimum current 30A for YCM3-250, and 50A for YCM3-400 and YCM3-630)

Red

Overload indicator

The red overload LED: steady on when I> 105%Ir

14.4 Operation keypad

<Arrow Keys>

1. In the normal working state, press the "△" key to enter the menu of parameters; press the "▽" key to enter the menu of faults.

2. When in the editing mode of a parameter, scroll up and down to increase or decrease the modified value. When the key is pressed for a long time, the modified value changes continuously and rapidly.

<Confirm Key>

1.Enter the parameter setting menu in the normal working interface.

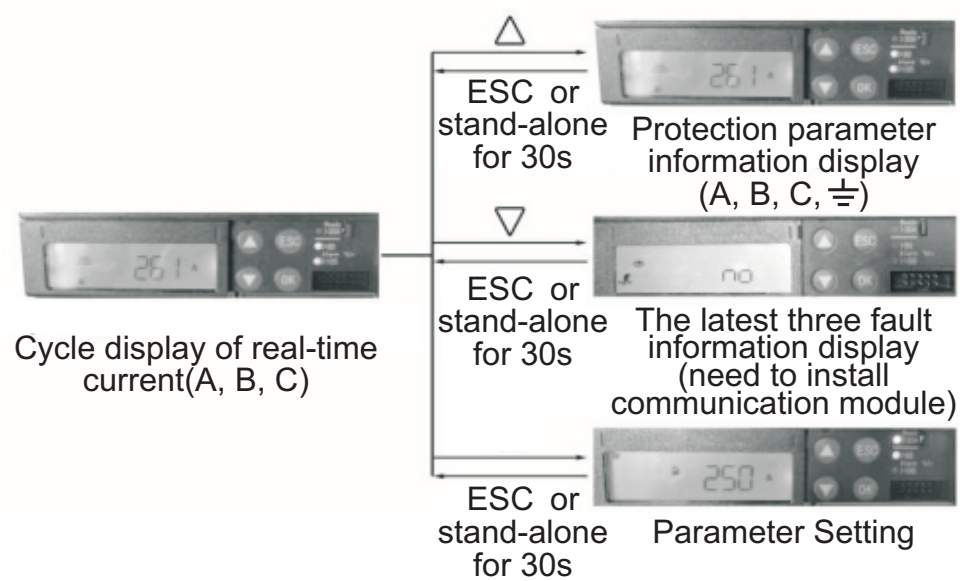
2. Confirm and save a modified value under the parameter editing mode.

<Back Key>

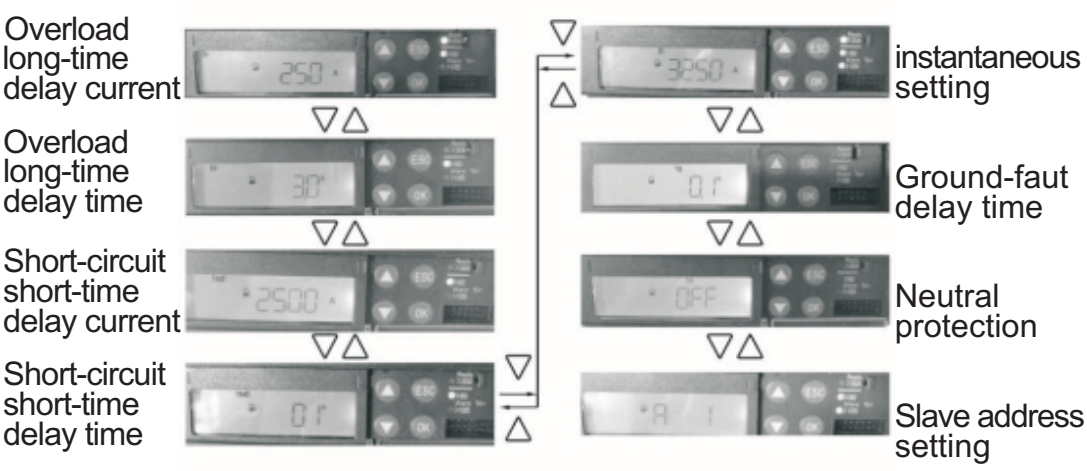
1. Return to the standard display interface.

2. In parameter editing mode, give up parameter modification.

14.5 Main menu



14.6 Protection Info display



14.7 Fault info display

When the following faults occur, you can press keypad up and down to view the last three times of the faults(press V for more than 3 seconds to delete the fault record)


Ir overload long-time fault


Isd short-time delay fault


Ii instantaneous fault


Ig ground-fault protection


In neutral fault


No system fault

Notes:

1.Three-pole circuit breaker can be installed with an external neutral line transformer to achieve neutral protection; for four-pole circuit breakers, neutral line protection can be set by pressing the keypad.

2.The above fault information needs to be equipped with our company's communication module, so that the product can record, view and delete the fault information, otherwise, the fault information cannot be viewed.

14.8 Symbol Desugnation

Indicates the data is the measured value

Indicates a trip fault (the latest 3 histories viewable)

Indicates a viewing functioni is being carried out (current or fault)

Indicates that the data is locked and saved

Indicates that the measured value exceeds the first alarm threshold (>90% Ir)

Indicates that the data is unlockedfor editing

Indicates that the measured value exceeds the second alarm threshold(>105% Ir)

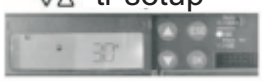
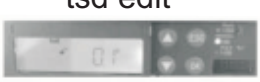
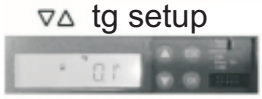
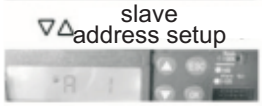
Indicates entering the system parameter setting

14.9 Protection data setting

Current cycling display menu

Adjust parameter up or down by the button △or▽ Save data by OK button, cancel data by ESC button

OK

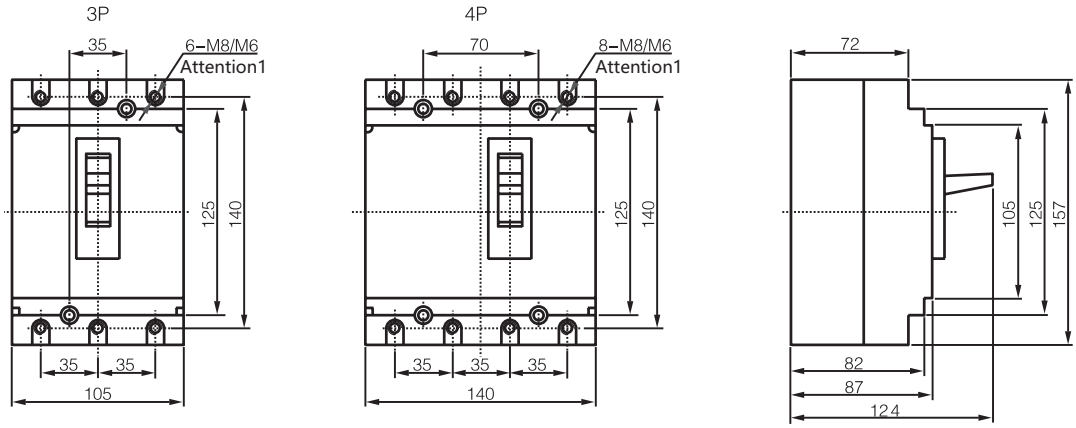
Ovorload long-time delay current	Ir setup		OK	Ir edit 	Adjustable range 0.4-1 Ir
Overload long-time delay time	▽△ tr setup		OK	tr edit 	Adjustable range 0.5-24s
Short-time short-time delay current	▽△ isd setup		OK	isd edit 	Adjustable 1.5-12 Ir or OFF
Short-time short-timo delay time	▽△ tsd setup		OK	tsd edit 	Adjustable range 0.1-0.4s
Short-time instantaneous current	▽△ li setup		OK	li edit 	Adjustable range 2-15 In or OFF
Grounc-fault protection delay time	▽△ tg setup		OK	tg edit 	Adjustable range 0.1-0.4s
Neutral protection current	▽△ in setup		OK	in edit 	Adjustable range 50%Ir, 100%Ir or OFF
Communication sllave address	▽△ slave address setup		OK	slave address edit 	Adjustable range 1-247

1.For a three-pole circuit breaker, the neutral line protection can be achieved by installing an external neutral line transformer, otherwise, select OFF the function; for a four-pole circuit breaker, the neutral line protection can be set by pressing the keypad.
2.After confirming the setting of each parameter value, you can use the ESC key to return to the main menu (real-time current cycle display) or automatically return after stand-alone for 30s.

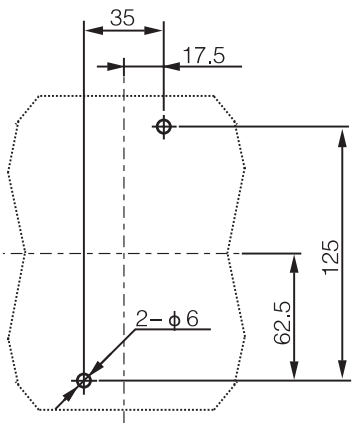
Remarks:
When using electronic trip units, please pay attention to the following points:
1.YCM3 electronic trip unit is suitable for 50Hz/60Hz, rated voltage below 690V power grid.
2.The power supply of the electronic trip unit is powered by the built-in current transformer. When the main circuit current is greater than or equal to 0.4In, the electronic trip unit can work.
3.The working temperature is -10℃±70℃, the average working temperature within 24 hours does not exceed+35℃, and the storage temperature is -25℃±85℃.
4.The altitude of the installation site should not exceed 2000m.
5.The relative humidity of the air at the installation site does not exceed 50% when the maximum temperature is +40℃, and a higher relative humidity is allowed at a lower temperature. The monthly average maximum humidity of the highest humidity month does not exceed 90%, and the minimum monthly average temperature of the month does not exceed +25℃.
6.The pollution degree is level 3.

15 Overall and mounting dimensions(mm)

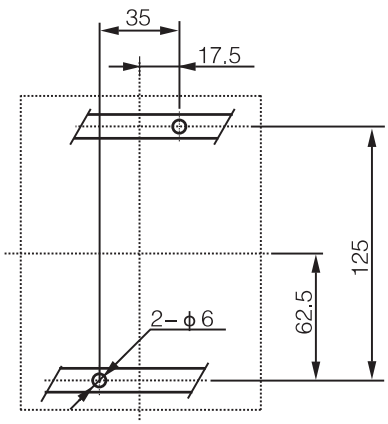
15.1 YCM3-100, 160, 250 Overall and mounting dimensions(mm)



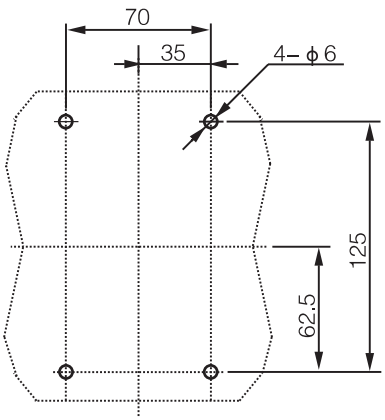
Attention1: when in>100A,Fixing screw size should be M8 ,When In ≤100A, fixing screw size should be M6.



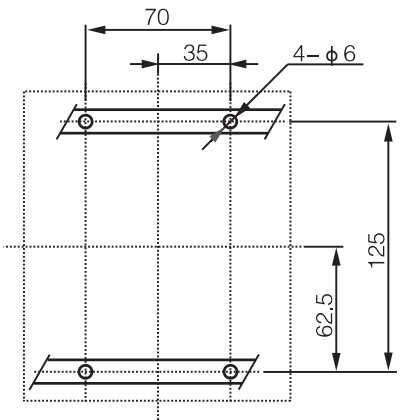
3P : Installed on the panel



3P : Installed on leading rails

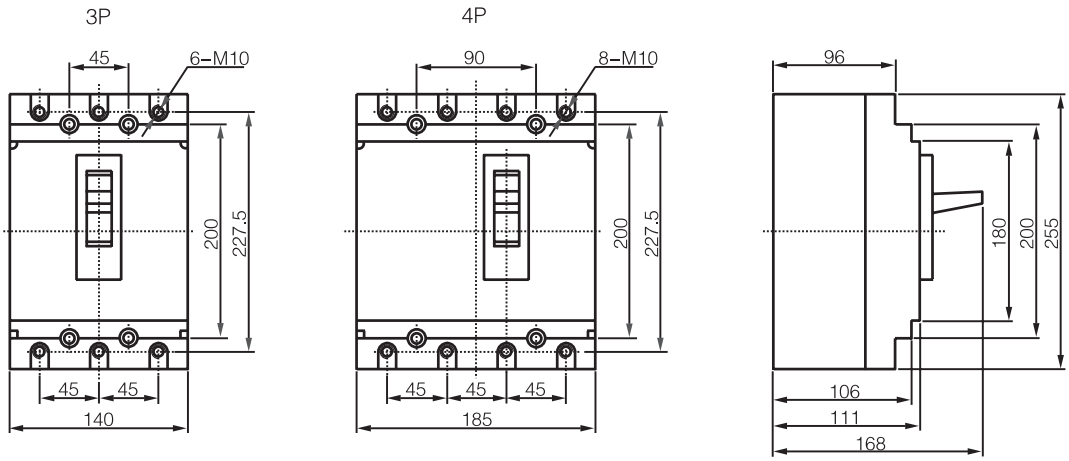


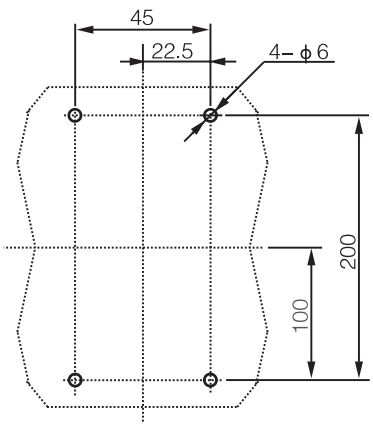
4P : Installed on the panel



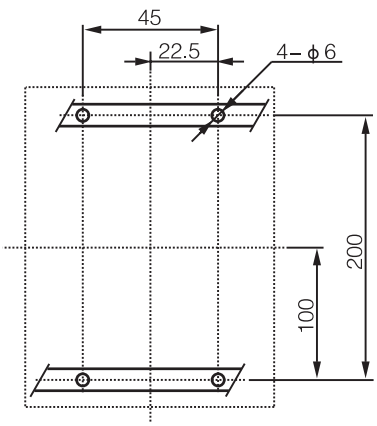
4P : Installed on leading rails

15.2 YCM3-400, 630 Overall and mounting dimensions(mm)

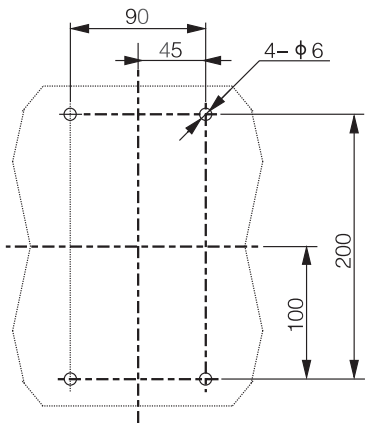




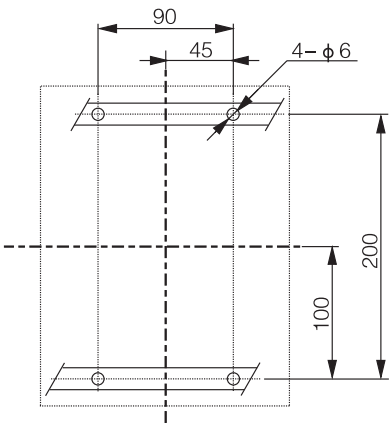
3P : Installed on the panel



3P : Installed on leading rails

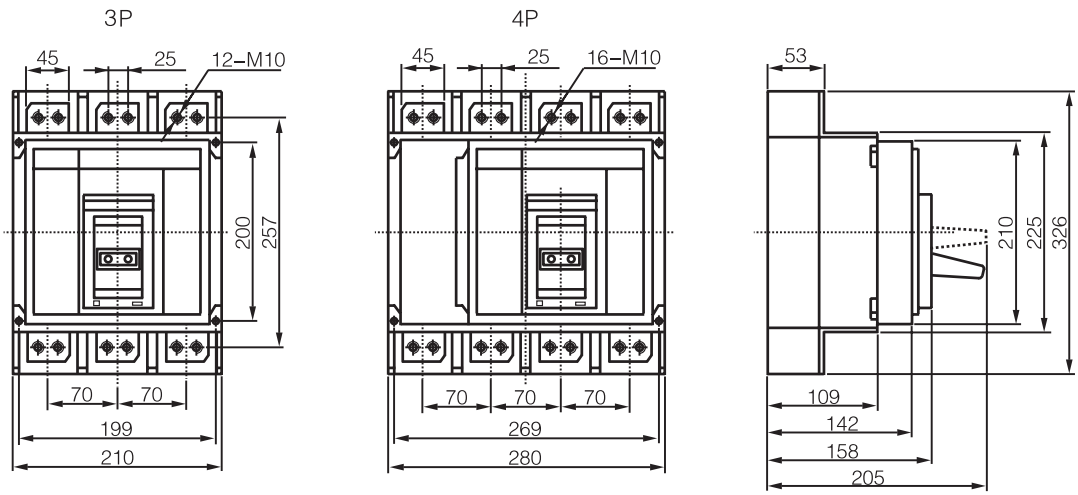


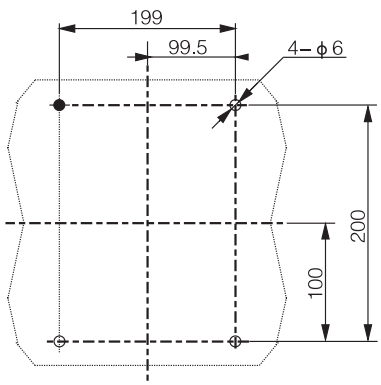
4P : Installed on the panel



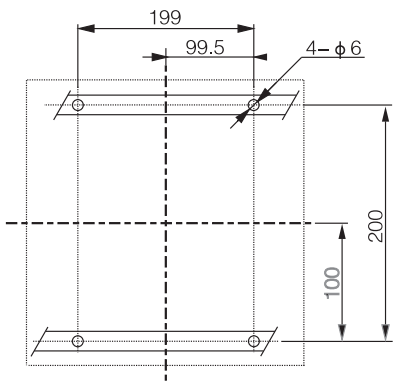
4P : Installed on leading rails

15.3 YCM3-1600 Overall and mounting dimensions(mm)

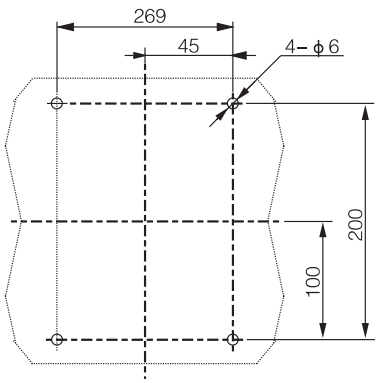




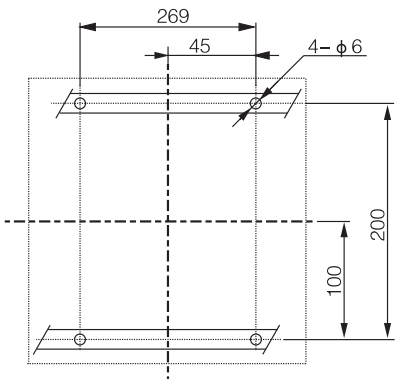
3P : Installed on the panel



3P : Installed on leading rails

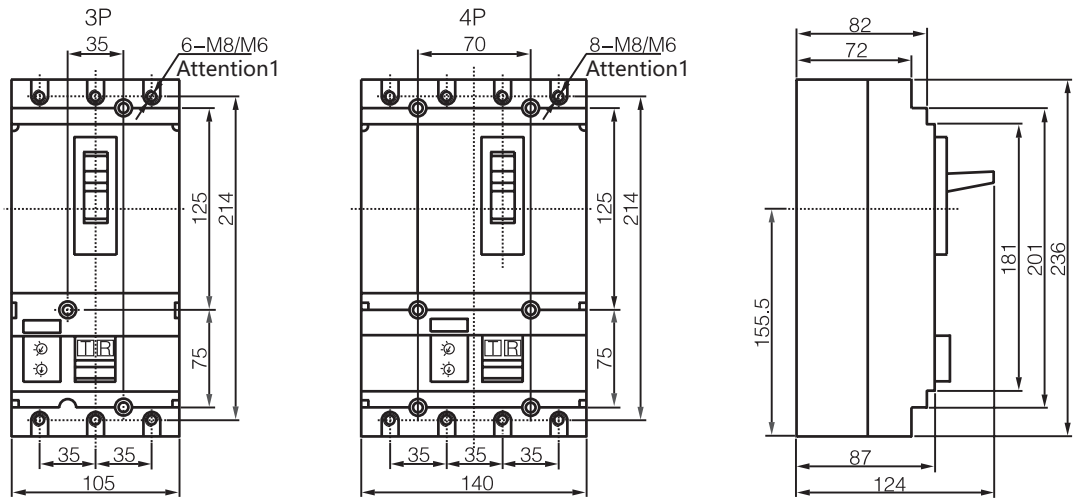


4P : Installed on the panel

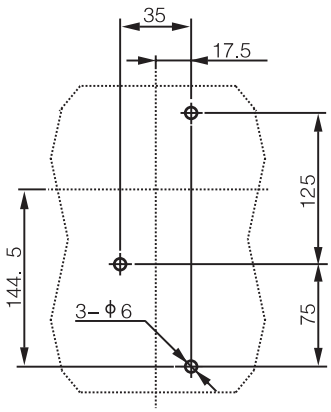


4P : Installed on leading rails

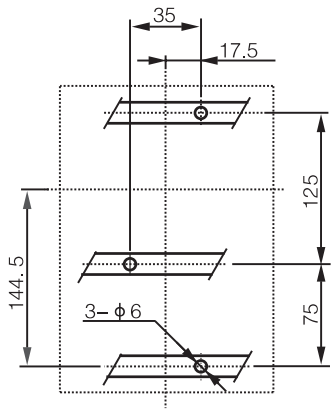
15.4 YCM3-100, 160, 250 (with residual current module) Overall and mounting dimensions(mm)



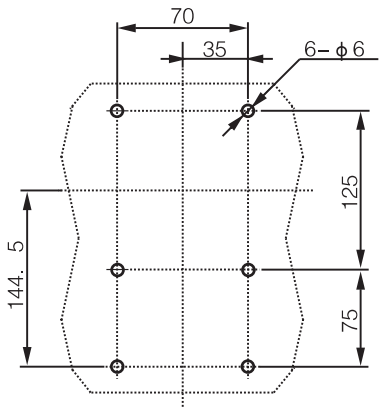
Attention1: when in>100A, Fixing screw size should be M8, When In≤100A, fixing screw size should be M6.



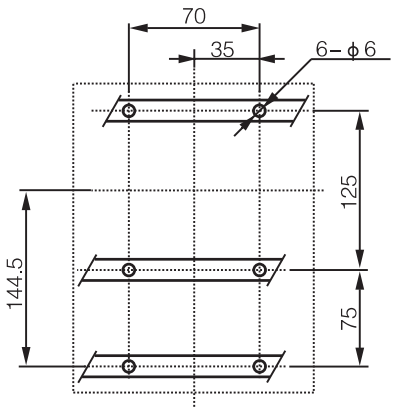
3P : Installed on the panel



3P : Installed on leading rails

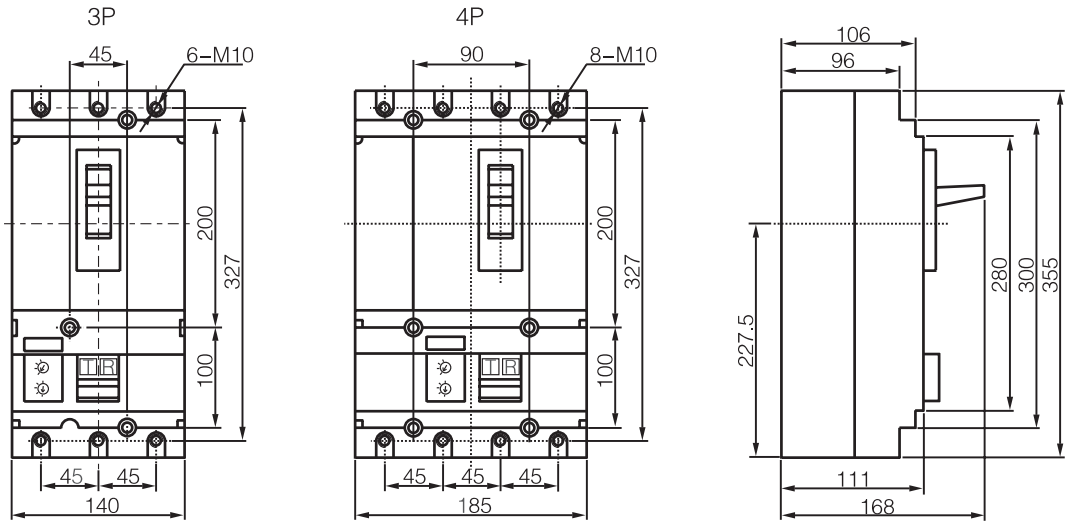


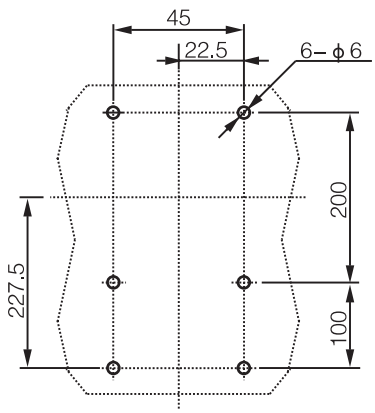
4P : Installed on the panel



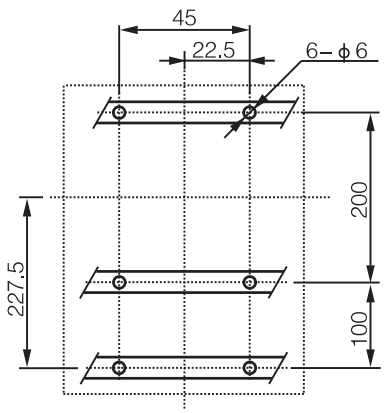
4P : Installed on leading rails

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

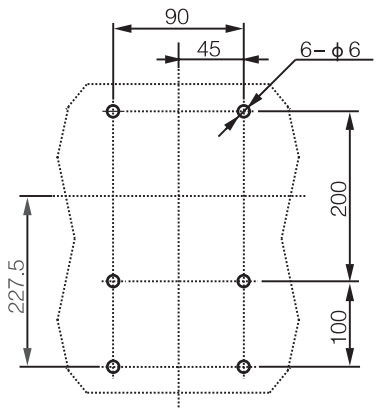




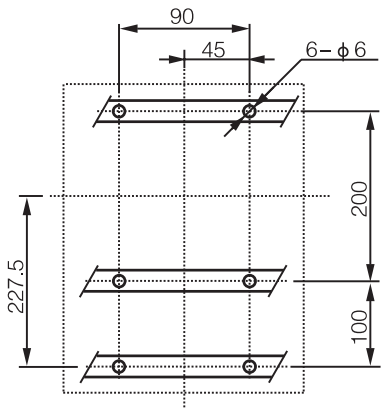
3P : Installed on the panel



3P : Installed on leading rails



4P : Installed on the panel



4P : Installed on leading rails

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

16.1 Provides leakage protection for all three-pole or four-pole YCM3-100 to 630 circuit breakers. The circiot bresker 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.

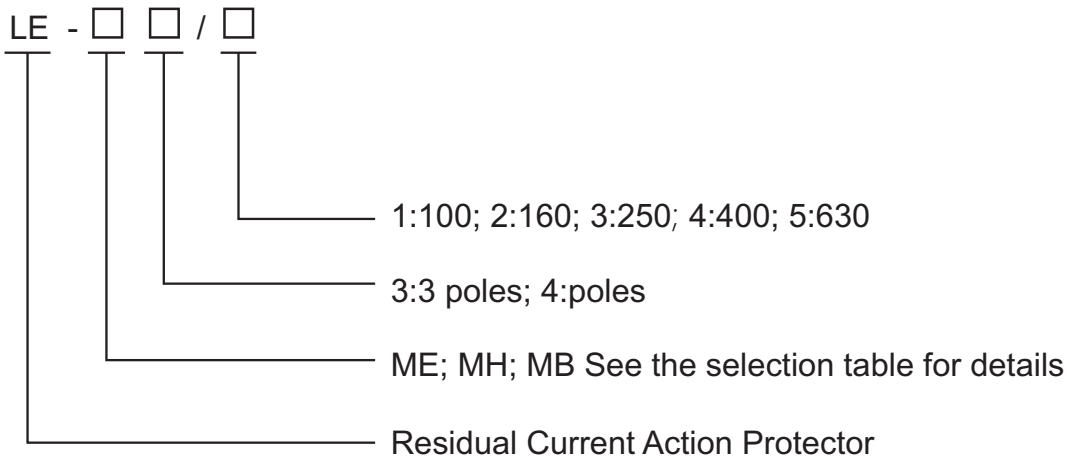
16.2 Remote indication：

The LE module can be fitted with an auxiliary contact ,which can remotely transmit the buckle caused by leakage fault.

16.3 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.

16.4 Type designation



Note: LE modules can not be sold separately.

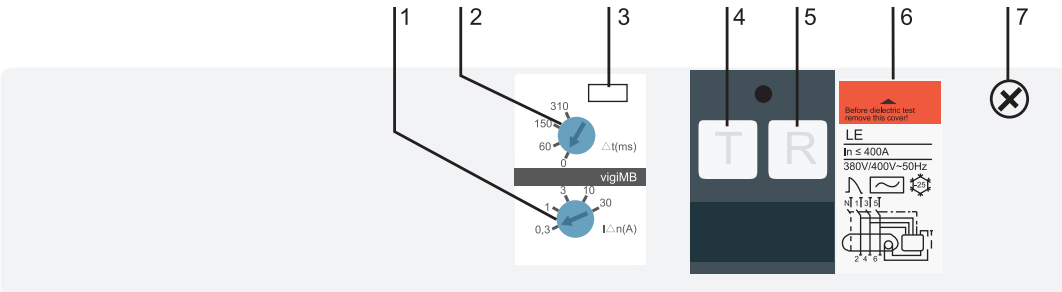
16.5 Selection of LE modules

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.



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

8.6 Operational safety

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

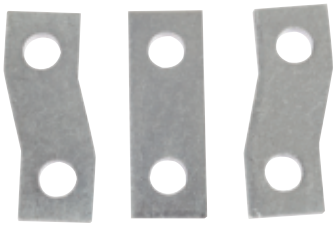
17 Accessories

17.1 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 instal 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
 AX Auxiliary contact	AC220/230V AC380/400V DC220V DC110V	All shells
 AL Alarm contact	AC220/230V AC380/400V DC220V DC110V	All shells

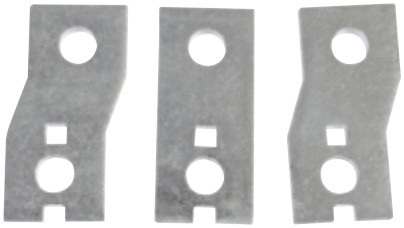
Accesspry name	Rated operating voltage	Applicable shell frame
 LE Remaining current protection module	Sensitivity I△n(A) adjustable range : 0.03,0.3,1,3,10. Note: The circuit breaker can be provided as needed by the user. Only the alarm does not trip.	YCM3-100 YCM3-160 YCM3-250
		YCM3-400 YCM3-630
 P 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

Accesspry 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
 Rotate the handle directly	YCM3-100 YCM3-160 YCM3-250 YCM3-400 YCM3-630
 Rotate the handle directly	YCM3-1600



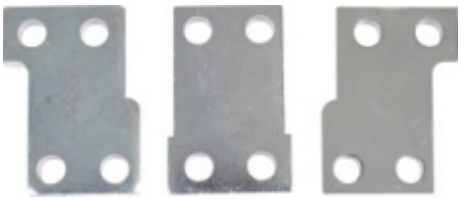
1.YCM3-100、160、200

Outer connecting plate



2.YCM3-400、630

Outer connecting plate



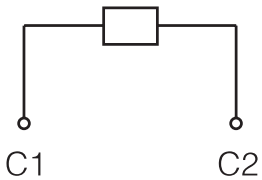
3.YCM3-1600

Outer connecting plate

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

17.2 Shunt release

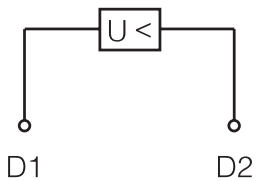
For remote control of the circuit breaker opening, the shunt release can reliably open the circuit breaker between 70% and 110% US. The shunt release should be prohibited from being energized for a long time(≤5s).



Coupling coil

17.3 Undervoltage release

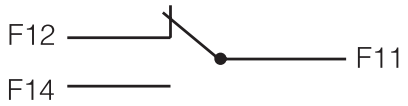
When the control voltage drops to 35% to 70%, the undervoltage release should trip and the circuit breaker should be reliably disconnected. When the control voltage is greater than or equal to 85%, the circuit breaker should be reliably closed. When the control voltage is less than 35%, it should be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



Coupling coil

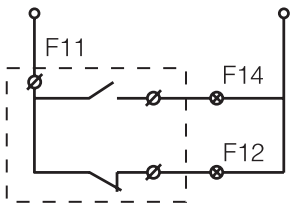
17.4 Auxiliary contact

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



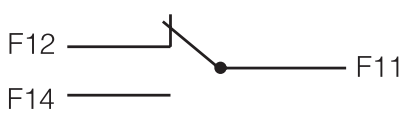
Power

Closing circuit

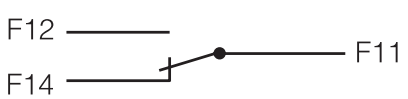
Opening circuit

17.5 Alarm contact

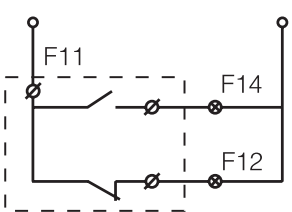
Function: Indicates the possible cause of tripping of the circuit breaker a: overload; b: short circuit; c: ground fault; d: undervoltage trip operation ;e: free trip. When the circuit breaker is normally closed or opened, the alarm contact does not move, and only after the trip or fault trip occurs, 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.



When the circuit breaker is in the opening position



When the circuit breaker is in the closing position



Power

Closing circuit

Opening circuit

18 Tips for Installation, operation and maintenance

18.1 This circuit breaker must be wired and installed by qualified personnel, and it is strictly prohibited to unpack it without authorization, otherwise you will be responsible for the consequences.

18.2 It is strictly forbidden to operate the circuit breaker with wet hands, otherwise an electric shock may occur.

18.3 When the circuit breaker opens due to a fault, the cause must be found out, and the closing operation can only be carried out after the fault is eliminated.

18.4 In order to prevent the phase-to-phase arc short circuit, the bare wires and copper bus bars at the inlet end should be insulated. When the circuit breaker is installed, the connecting wire should be the wire that can bear the corresponding current carrying capacity.

18.5 The circuit breaker should be inspected every six months. The power supply should be cut off during the inspection, and the handle should be operated to close and open the circuit breaker 3 times to check whether the mechanism is reliable; check the insulation resistance of the circuit breaker and the mounting plate, and remove the dust on the surface of the casing. Keep good insulation, if the insulation resistance is less than 10MQ, the circuit breaker should be replaced in time.

18.6 When selecting a circuit breaker, the technical parameters on the circuit breaker should be consistent with actual requirements. Various characteristics and accessories of the circuit breaker are set by the manufacturer, and cannot be adjusted arbitrarily during use.

18.7 Prevent the breaker from being damped and bumped in the process of operation, store and transportation.

18.8 Various defects of the breaker may take place in the process of operation. For example, fasteners are loose, wires are not well connected, and mechanism is blocked. The corresponding technical parameters are reasonably selected and accord with the demands. These defects will be examined and removed by special technician of users. The special technician of the manufacturer is responsible for the analysis of the cause of other defects, and for the removal of them, and for the replacement of the parameters.

CNC
ELECTRIC

CERTIFICATE

Product Model: YCM3

Standard: IEC 60947-2

Inspector : CNC 003

Production date: Printed on the product or package.

This product is qualified according to the delivery inspection

CNC ELECTRIC

Tel: 0086-577-61989999 Fax: 0086-577-61891122

www.cncele.com E-mail: cncele@cncele.com