NanQue®

NQCM1(B)

DC Circuit Breaker

New Direction

DC Circuit Breaker

NQCM1(B)

Product Introductin

NQCM1B series plastic case circuit breaker (hereinafter referred to as circuit breaker) is a new type of circuit breaker designed and developed by our company using international advanced technology. The circuit breaker has the characteristics of small size, high breaking capacity, short flashover, and anti-vibration. It is an ideal product for land and ships. It is suitable for power distribution networks with DC rated working voltage up to 12~120V, including 12V, 24V, 36V,48V, 60V, 72V, 96V, 120V etc, main used to battery circuit protection, and rated current up to 1250A. It is used to distribute power and protect lines and power supply equipment from overload, short circuit and undervoltage faults. It can also be used for infrequent switching of lines and infrequent starting of motors, as well as overload, short circuit and undervoltage protection. The circuit breaker can be installed vertically (that is, vertical installation) or horizontally (that is, horizontal installation).
The circuit breaker meets the standard: IEC60947-2

Model Meaning

NQCM1-63M-B63A-T-P/2 3 10

- NQCM1-63: Model
- M: Blank \ L: Standard; M: high; H: max breaking capacity
- B63A: Rated working current
- T: Blank: white cover; T: transparent cover
- P: Empty: operated by the handle; Z: electric operation; P: Turn the handle to operate
- 2: Poles
- 3: 2: Electromagnetic release; 3: Duplex release
- 10: Accessories code

Technical Parameters

DC Circuit Breaker

NQCM1(B)

Model	NQCM1-63				NQCM1-125				NQCM1-250			
Frame current Inm(A)	63				125				250			
Rated insulation voltage DC(V)	800				800							
Rated impulse withstand voltage (KV)	6				8				8			
Rated working voltageDC (V)	12~120											
Breaking capacity level	L / M / H											
Rated ultimate short-circuit breaking capacityIcu(kA)	25, 50, 70											
Rated operating short-circuit breaking capacity Ics (KA)	18, 30, 40											
Mechanical life	8500				8500				7000			
Electrical life	1500				1500				1000			
Arcing distance(mm)	50				50				50			
Thermal Magnetic Fixation/ Rated Current(A)	10/16/20/25/32/40/50/63				80/100/125				150/160/180/200/225/250			
Poles	1P	2P	3P	4P	1P	2P	3P	4P	1P	2P	3P	4P
Indication and control accessories can be installed												
Reward		✓	✓	✓		✓	✓	✓		✓	✓	✓
Undervoltage		✓	✓	✓		✓	✓	✓		✓	✓	✓
Auxiliary		✓	✓	✓		✓	✓	✓		✓	✓	✓
Call the police		✓	✓	✓		✓	✓	✓		✓	✓	✓
Rotary handle operating mechanism		✓	✓	✓		✓	✓	✓		✓	✓	✓
Electric operating mechanism		✓	✓	✓		✓	✓	✓		✓	✓	✓
Mounting connection												
Panel front fixing	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Panel back fixing			✓	✓			✓	✓			✓	✓
Panel front inserting			✓	✓			✓	✓			✓	✓
Panel back inserting			✓	✓			✓	✓			✓	✓

DC Circuit Breaker

NQCM1(B)

Model	NQCM1-400				NQCM1-630				NQCM1-800			
Frame current Inm(A)	400				630				800			
Rated insulation voltage DC(V)	800											
Rated impulse withstand voltage (KV)	8				8				8			
Rated working voltage DC(V)	12~120											
Breaking capacity level	L / M / H											
Rated ultimate short-circuit breaking capacityIcu(kA)	25, 50, 70											
Rated operating short-circuit breaking capacity Ics (KA)	18, 30, 40											
Mechanical life	4000				4000				2500			
Electrical life	1000				1000				500			
Arcing distance(mm)	100				100				100			
Thermal Magnetic Fixation/ Rated Current(A)	300/315/350/400				500/630				700/800			
Poles	1P	2P	3P	4P	1P	2P	3P	4P	1P	2P	3P	4P
Indication and control accessories can be installed												
Reward		✓	✓	✓		✓	✓	✓		✓	✓	✓
Undervoltage		✓	✓	✓		✓	✓	✓		✓	✓	✓
Auxiliary		✓	✓	✓		✓	✓	✓		✓	✓	✓
Call the police		✓	✓	✓		✓	✓	✓		✓	✓	✓
Rotary handle operating mechanism		✓	✓	✓		✓	✓	✓		✓	✓	✓
Electric operating mechanism		✓	✓	✓		✓	✓	✓		✓	✓	✓
Mounting connection												
Panel front fixing	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Panel back fixing			✓	✓			✓	✓			✓	✓
Panel front inserting			✓				✓				✓	
Panel back inserting			✓	✓			✓	✓			✓	✓

DC Circuit Breaker

NQCM1(B)

Model	NQCM1-1250			
Frame current Inm(A)	1250			
Rated insulation voltage DC(V)	800			
Rated impulse withstand voltage (KV)	8			
Rated working voltage DC(V)	12~120			
Breaking capacity level	L / M / H			
Rated ultimate short-circuit breaking capacityIcu(kA)	25, 50, 70			
Rated operating short-circuit breaking capacity Ics (KA)	18, 30, 40			
Mechanical life	2500			
Electrical life	500			
Arcing distance(mm)	100			
Thermal Magnetic Fixation/ Rated Current(A)	1000/1250			
Poles	1P	2P	3P	4P
Indication and control accessories can be installed				
Reward	✓	✓	✓	✓
Undervoltage	✓	✓	✓	✓
Auxiliary	✓	✓	✓	✓
Call the police				
Rotary handle operating mechanism				
Electric operating mechanism	✓	✓	✓	✓
Mounting connection				
Panel front fixing	✓	✓	✓	✓
Panel back fixing				
Panel front inserting				
Panel back inserting				

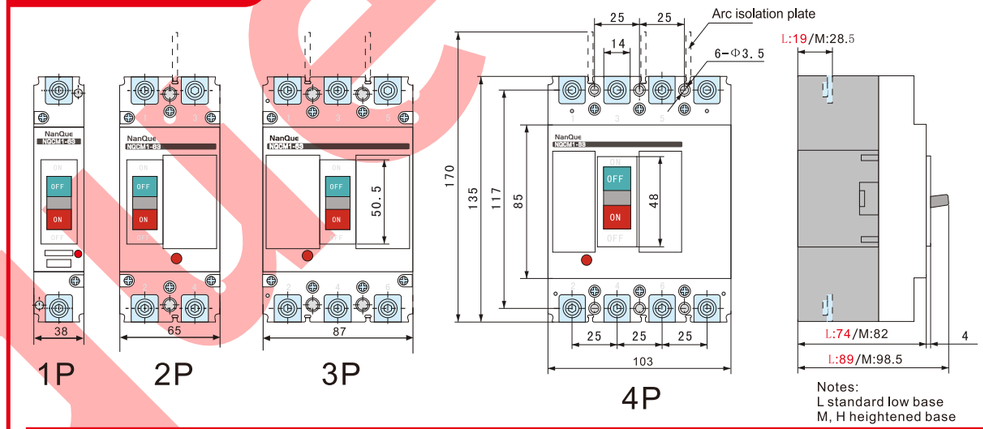
DC Circuit Breaker

NQCM1(B)

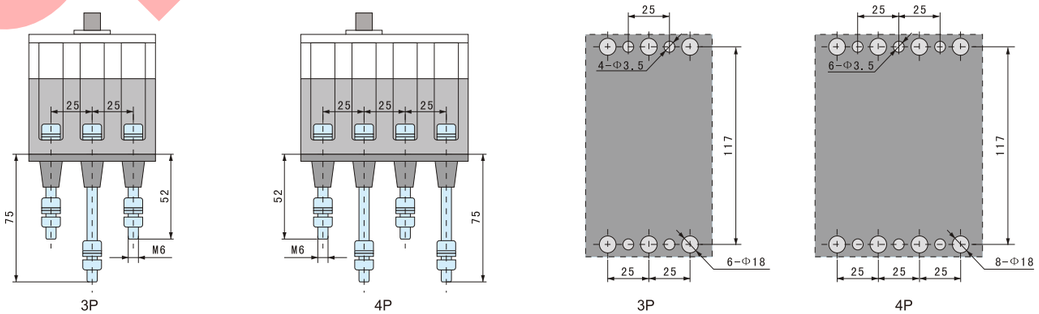
Mounting size

NQCM1-63

Unit: MM

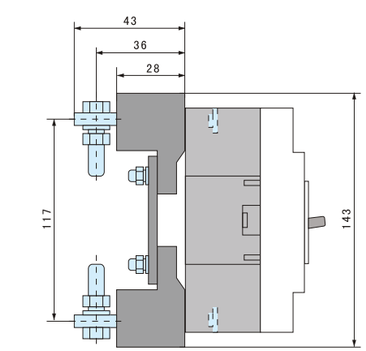


Panel back fixing wiring dimensions

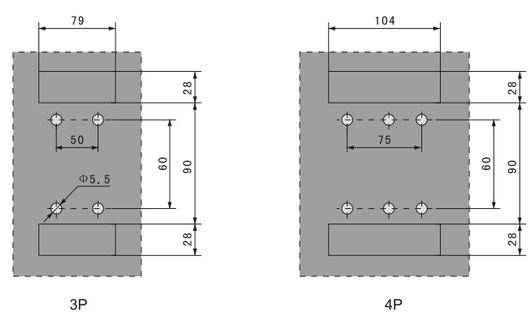


Mounting panel opening hole size

Panel inserting wiring dimensions



Mounting panel opening hole size

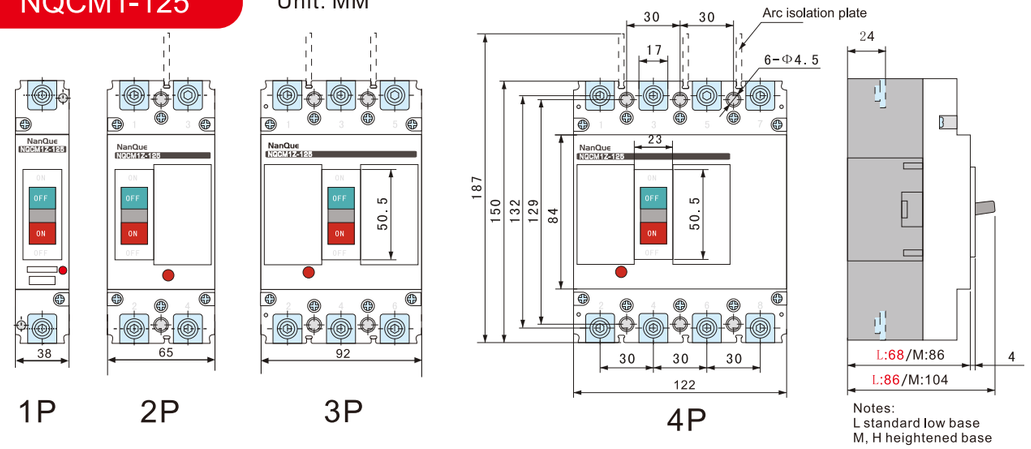


DC Circuit Breaker

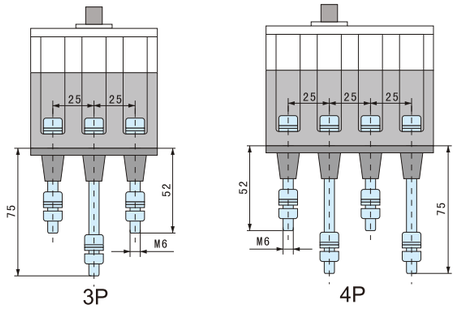
NQCM1(B)

NQCM1-125

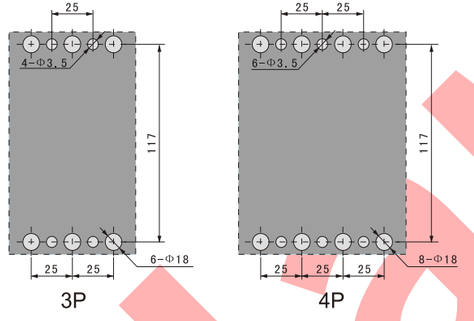
Unit: MM



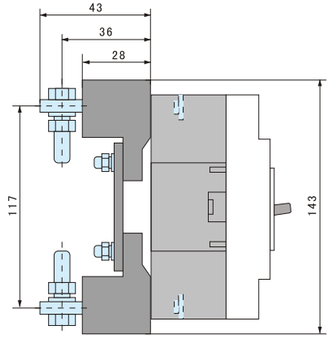
Panel back fixing wiring dimensions



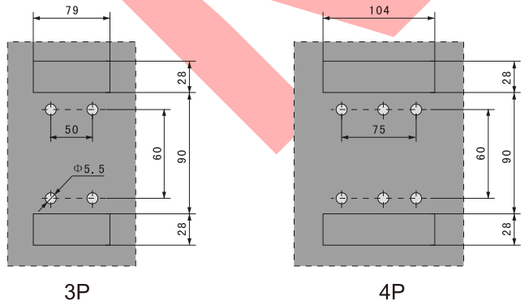
Mounting panel opening hole size



Panel inserting wiring dimensions

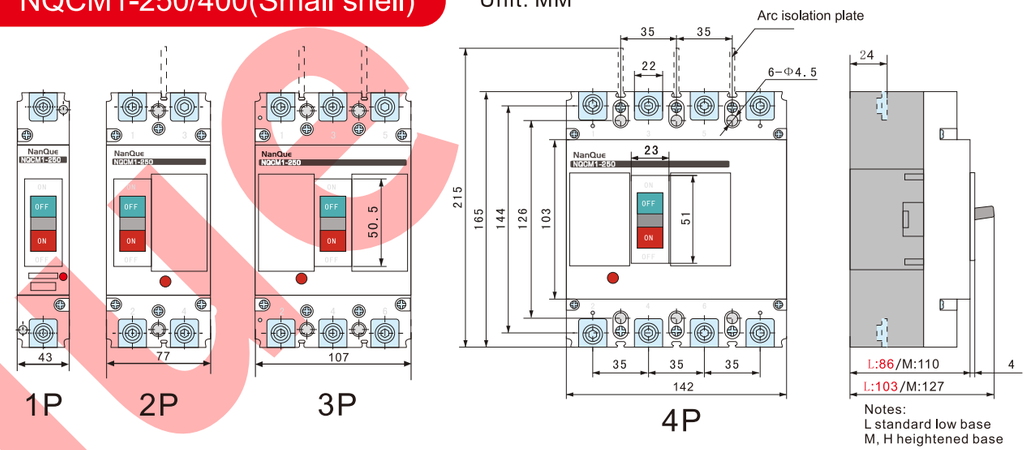


Mounting panel opening hole size

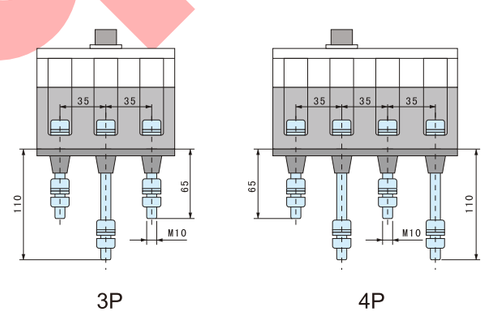


NQCM1-250/400(Small shell)

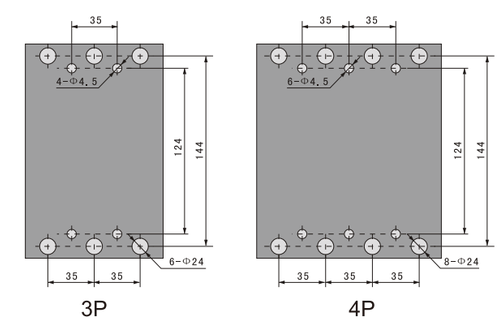
Unit: MM



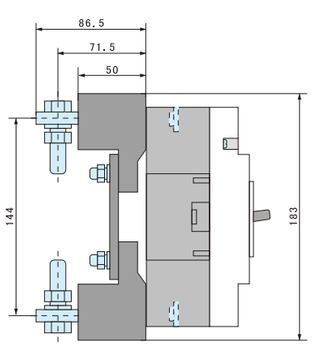
Panel back fixing wiring dimensions



Mounting panel opening hole size



Panel inserting wiring dimensions



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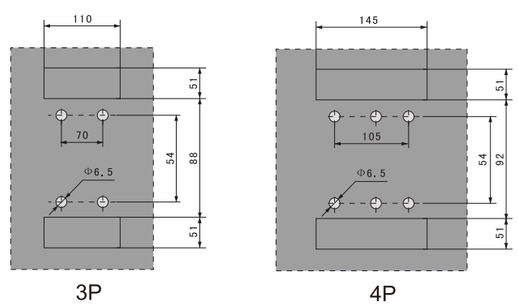
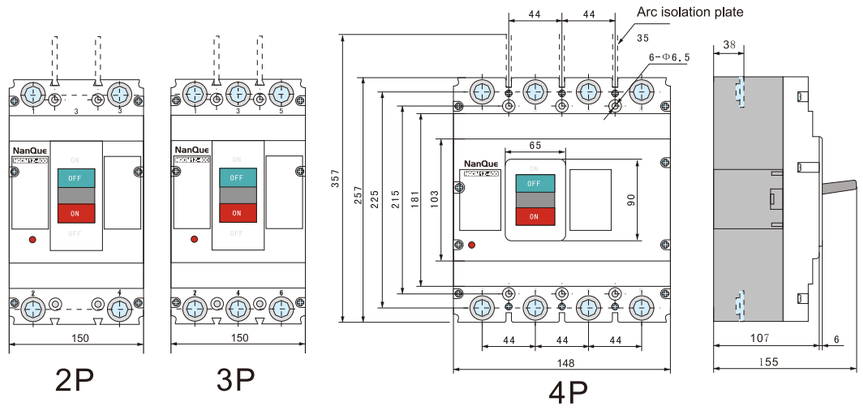


DC Circuit Breaker

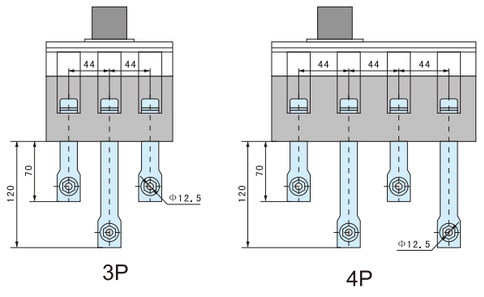
NQCM1(B)

NQCM1-400

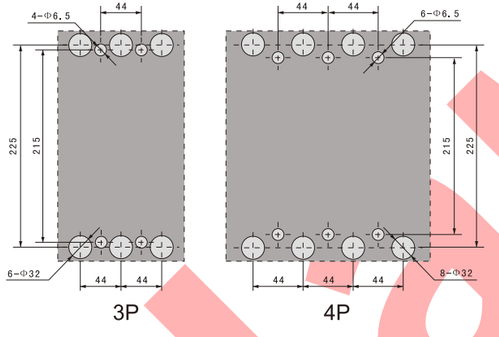
Unit: MM



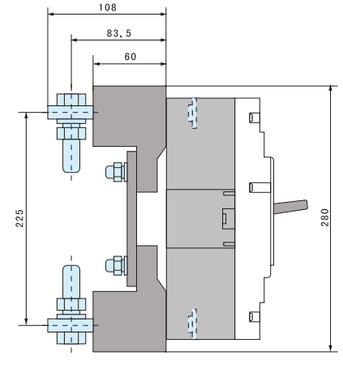
Panel back fixing wiring dimensions



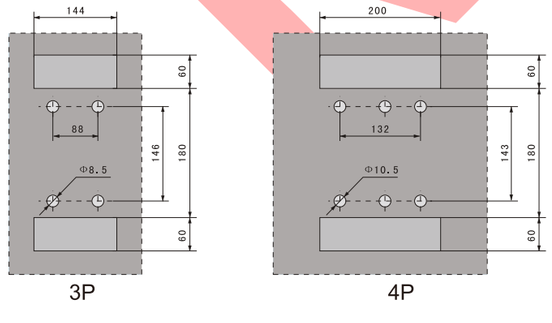
Mounting panel opening hole size



Panel inserting wiring dimensions

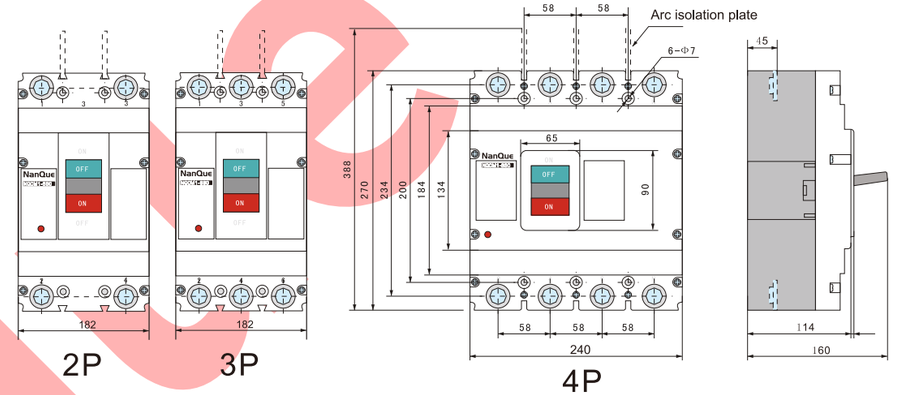


Mounting panel opening hole size

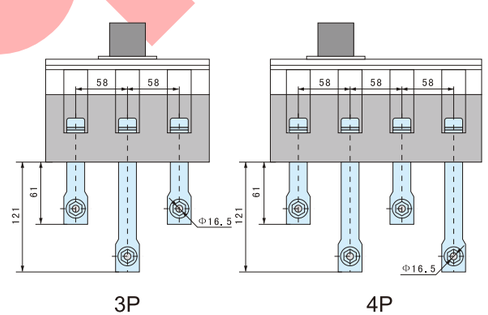


NQCM1-630

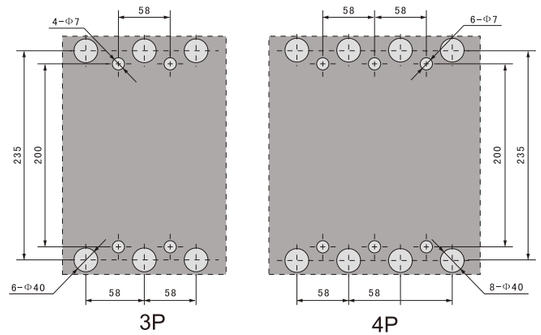
Unit: MM



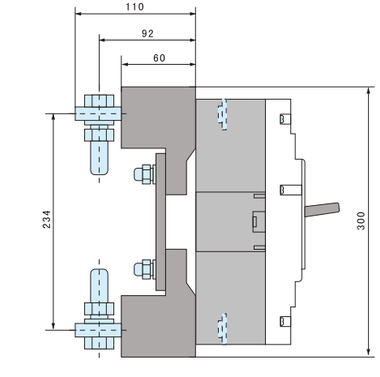
Panel back fixing wiring dimensions



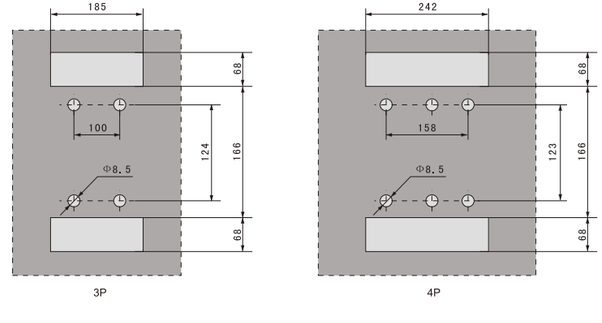
Mounting panel opening hole size



Panel inserting wiring dimensions



Mounting panel opening hole size

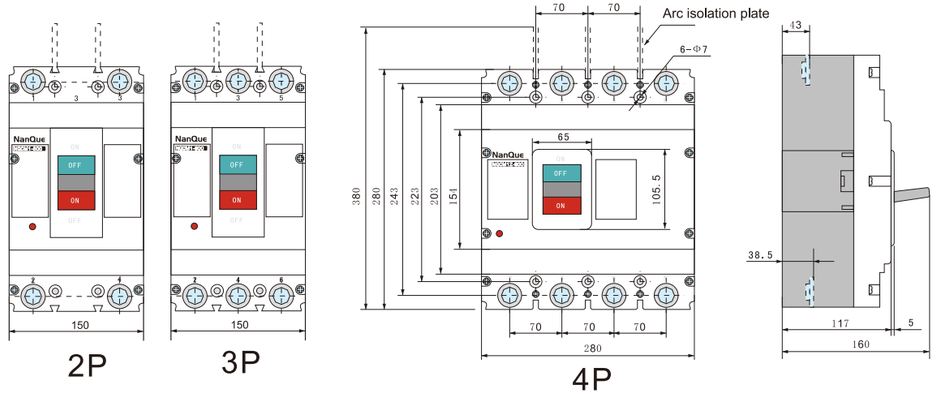


DC Circuit Breaker

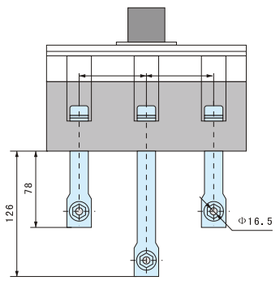
NQCM1(B)

NQCM1-800

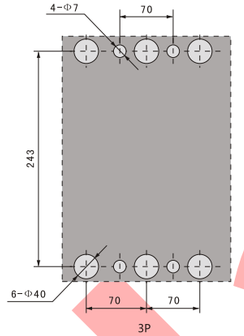
Unit: MM



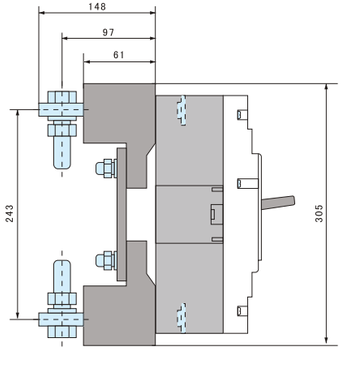
Panel back fixing wiring dimensions



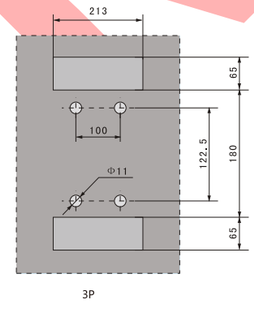
Mounting panel opening hole size



Panel inserting wiring dimensions



Mounting panel opening hole size



DC Circuit Breaker

NQCM1(B)

Protection characteristic curve

Figure 1 10A~32A Action characteristic curve

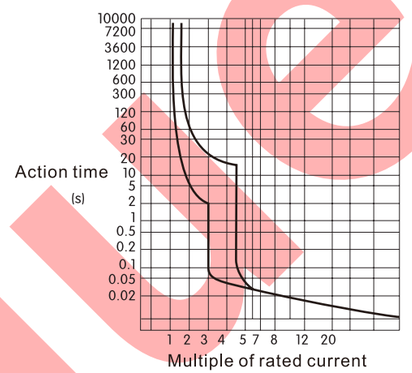


Figure 2 10A~32A
Temperature and Current Compensation Curves

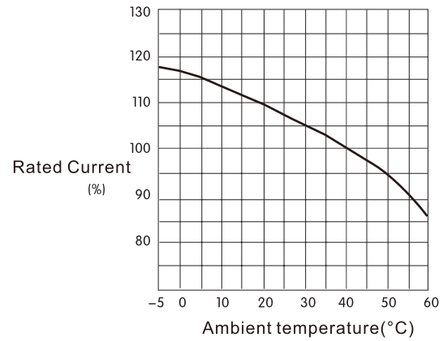


Figure 3 40A~125A Action characteristic curve

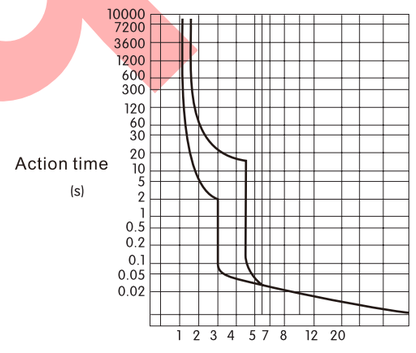


Figure 4 40A~125A
Temperature and Current Compensation Curves

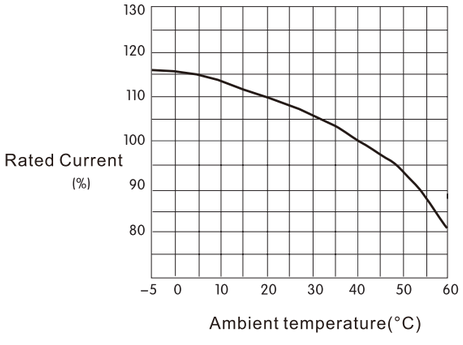


Figure 5 150A~250A Action characteristic curve

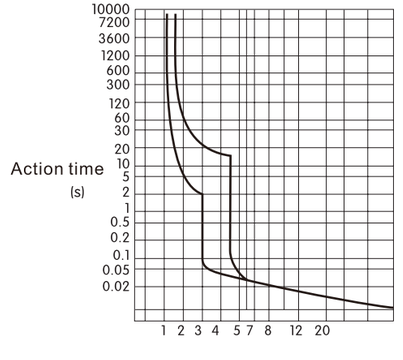
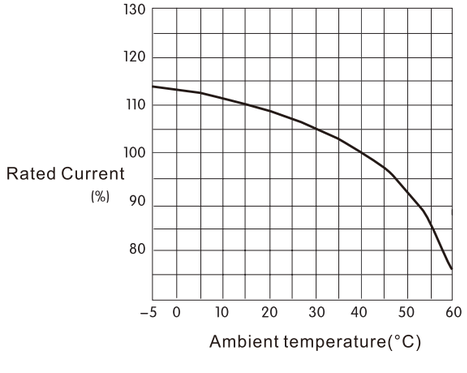


Figure 6 150A~250A
Temperature and Current Compensation Curves



DC Circuit Breaker

NQCM1(B)

Figure 7 300A~400A Action characteristic curve

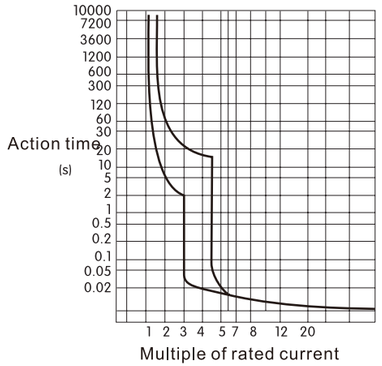


Figure 8 300A~400A
Temperature and Current Compensation Curves

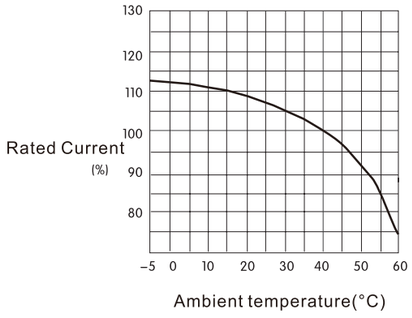


Figure 9 500A~800A Action characteristic curve

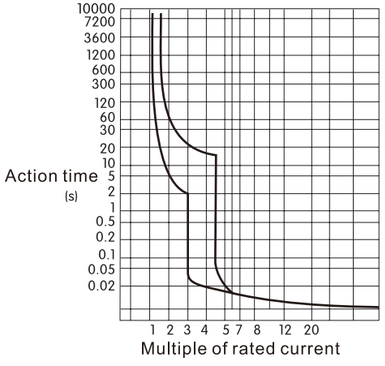


Figure 10 500A~800A
Temperature and Current Compensation Curves

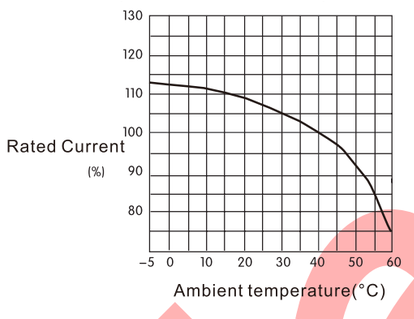


Figure 10 1000A~1250A Action characteristic curve

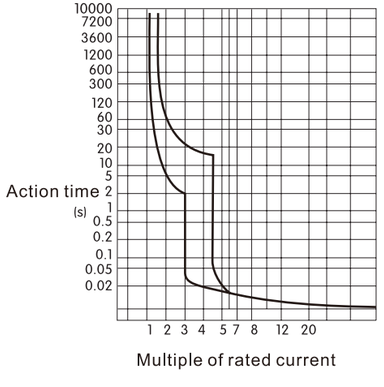
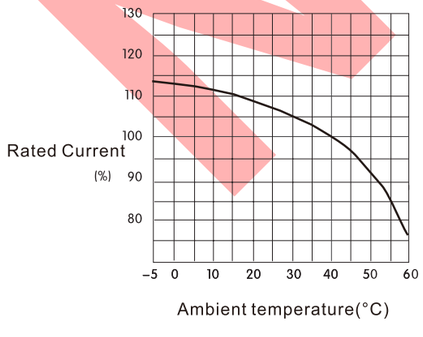


Figure 12 1000A~1250A
Temperature and Current Compensation Curves



DC Circuit Breaker

NQCM1(B)

Accessories

Alarm contact ●
Shunt release ○
Auxiliary contact ■
Undervoltage release ▲

Left side installation — MCCB Handle — Right side installation

Accessory name	Accessory code		Accessory installation and lead wire method						
	Instantaneous release	Duplex release	63A~250A				300A~400A		
			1P	2P	3P		2P	3P	4P
Without accessories	200	300	— —						
Alarm contact	208	308	— —						
Shunt release	210	310	— —						
Prepaid meter release	210Y	310Y	— —						
Auxiliary contact	220	320	— —						
Undervoltage release	230	330	— —						
Shunt release	240	340	— —						
Auxiliary contact	240Y	340Y	— —						
Shunt release	250	350	— —	— —					
Undervoltage release	250Y	350Y	— —	— —					
Two sets of auxiliary contacts	260	360	— —	— —					
Auxiliary contact, undervoltage release	270	370	— —	— —					
Shunt release	218	318	— —	— —					
Alarm contact	218Y	318Y	— —	— —					
Auxiliary contact, alarm contact	228	328	— —	— —					
Undervoltage release, auxiliary contacts	238	338	— —	— —					
Shunt release, auxiliary contacts	248	348	— —	— —					
Alarm contact	348Y	348Y	— —	— —					
Shunt release, undervoltage release, alarm contact	258	358	— —	— —	— —	— —	— —	— —	— —
Two sets of auxiliary contacts, alarm contacts	268	368	— —	— —					
Auxiliary contact, undervoltage release, alarm contact	278	378	— —	— —					

Accessory name	Accessory code		Accessory installation and lead wire method					
	Instantaneous release	Duplex release	500~630A		800A		1250A	
			2P, 3P	4P	2P, 3P	4P	2P, 3P	4P
Without accessories	200	300				— —		— —
Alarm contact	208	308				— —		— —
Shunt release	210	310				— —		— —
Prepaid meter release	210Y	310Y						
Auxiliary contact	220	320				— —		— —
Undervoltage release	230	330				— —		— —
Shunt release	240	340				— —		— —
Auxiliary contact	240Y	340Y						
Shunt release	250	350		— —		— —	— —	— —
Undervoltage release	250Y	350Y						
Two sets of auxiliary contacts	260	360				— —		— —
Auxiliary contact, undervoltage release	270	370				— —		— —
Shunt release	218	318		— —		— —	— —	— —
Alarm Assist	218Y	318Y						
Auxiliary contact, alarm contact	228	328		— —		— —	— —	— —
Undervoltage release, auxiliary contacts	238	338		— —		— —	— —	— —
Shunt release, auxiliary contacts	248	348		— —		— —	— —	— —
Alarm contact	348Y	348Y						
Shunt release, undervoltage release, alarm contact	258	358	— —	— —	— —	— —	— —	— —
Two sets of auxiliary contacts, alarm contacts	268	368				— —	— —	— —
Auxiliary contact, undervoltage release, alarm contact	278	378		— —		— —	— —	— —

DC Circuit Breaker
NQCM1(B)

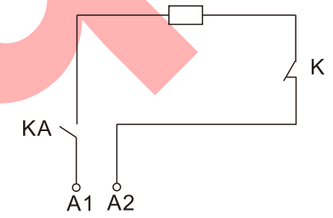
Internal accessories

1, Shunt release

The shunt release is built inside the circuit breaker, and connected by leads or terminals, it can realize the remote control and opening of the circuit breaker, so as to protect and isolate the power supply line.

Maximum copper conductor length requirements:

Wire length / Wire area / Control voltage Uc	1.5mm²	2.5mm²
100%	150m	250m
85%	100m	160m



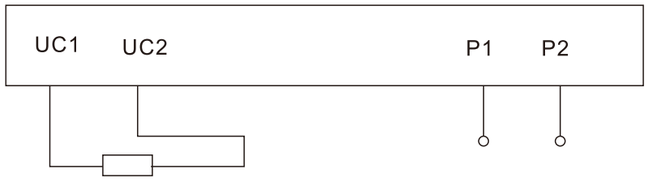
Coil control voltage of shunt release: AC/DC 24V, 110V, 220V, 380V The voltage floating range is 70%~110%, which can reliably break the circuit breaker, and the release coil current is 1A~5A

Principle wiring diagram of shunt release

2, Undervoltage release

When the power supply voltage drops to 70%~35% of the rated operating voltage of the undervoltage release, the undervoltage release will reliably break the circuit breaker; when the power supply voltage is lower than 35% of the rated operating voltage of the undervoltage release , The undervoltage release can prevent the circuit breaker from closing; when the power supply voltage is higher than 85% of the rated operating voltage of the undervoltage release, the undervoltage release can ensure the reliable closing of the circuit breaker. The rated value of the undervoltage release is: AC50Hz, 220V (170V~270V), 380V (350~415V).

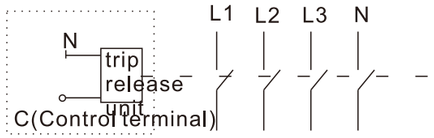
A circuit breaker equipped with an undervoltage release can only be opened and closed normally when the undervoltage is connected to the rated voltage.



Principle wiring diagram of undervoltage release

3, Special release for prepaid electricity meters

The rated operating voltage Ue of the special release for prepaid meters is AC230/50Hz, and it can work normally within the range of (65%~110%) Ue. When the Ctrl terminal is cut off, the circuit breaker will open with a delay of 0.5s~2s.



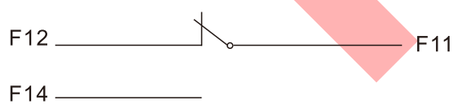
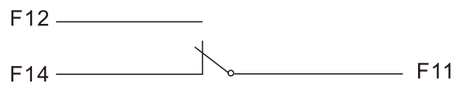
C control terminal, input rated maintenance voltage Ue: 230V Once the maintenance voltage is missing or lower than 65% of the rated voltage value, the circuit breaker will trip to disconnect the circuit.

Schematic Wiring Diagram of Special Release for Prepaid Meter

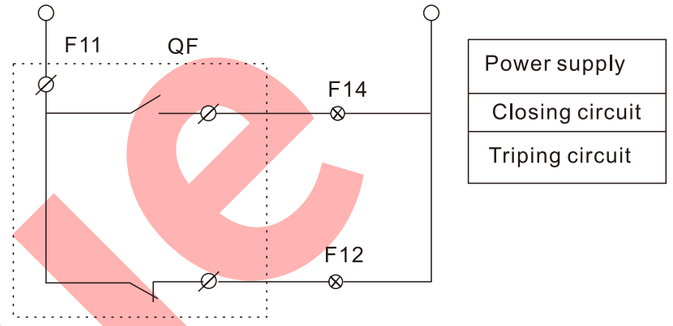
4, Auxiliary contacts

When the circuit breaker trips (manual and fault trip), the auxiliary contact switches between the normally open and normally closed points, thereby lighting or extinguishing the trip indicator light, etc.; the auxiliary contact is internally passive and requires an external power supply for Turn on the indicator light or supply power to the signal generator, etc.

	Heating current(Ith)	Rated current Ie at AC 400V (AC-15)	Rated current Ie at DC 220V (DC-13)
Auxiliary contact	3	0.4	0.15

When the circuit breaker is in the "Off" position	
When the circuit breaker is in the "On" position	

DC Circuit Breaker
NQCM1(B)

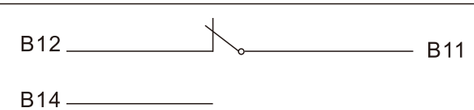
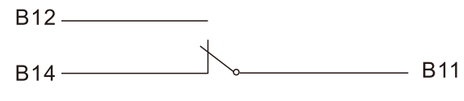


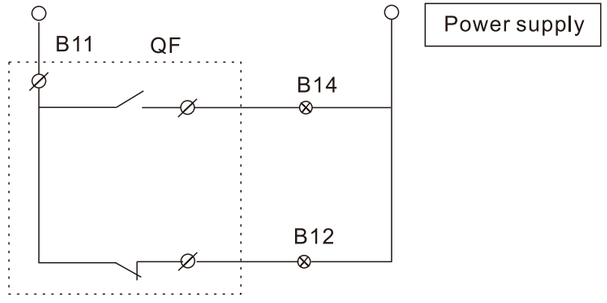
Auxiliary contact principle wiring diagram

5, Alarm contact

The alarm contact does not act when the circuit breaker is normally closed or closed. Only after free tripping or fault tripping, the alarm contact is switched between normally open and normally closed. The alarm contact is internally passive and requires an external power supply to light up. Fault alarm indicator light or power supply to the signal generator, etc.

	Heating current(Ith)	Rated current Ie at AC 400V (AC-15)	Rated current Ie at DC 220V (DC-13)
Auxiliary contact	3	0.4	0.15

When the circuit breaker is in the "Off" position	
When the circuit breaker is in the "On" position	



Auxiliary contact principle wiring diagram

DC Circuit Breaker

NQCM1(B)

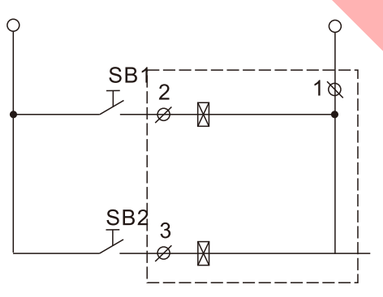
External accessories

1, Electric operating mechanism

Model / Type	NQCM1-63, NQCM1-125, MQCM1-250	NQCM1-400, NQCM1-630, NQCM1-800, NQCM1-1250
Structure type	Electromagnet	Electric motor
AC voltage code	AC50Hz 24V, 110V, 220V, 380V	AC50Hz 24V, 110V, 220V, 380V
DC voltage code	DC 24V, 110V, 220V	DC 24V, 110V, 220V

Note: After the circuit breaker with electric operating mechanism trips and trips, the electric operating mechanism must make the circuit breaker buckle again before closing.

NQCM1-63, NQCM1-125, MQCM1-250 Opening and closing principle diagram of electric operating mechanism (AC/DC)



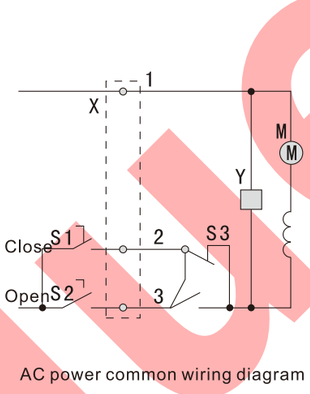
Power supply
Closing circuit
Triping circuit

AC/DC power common wiring diagram

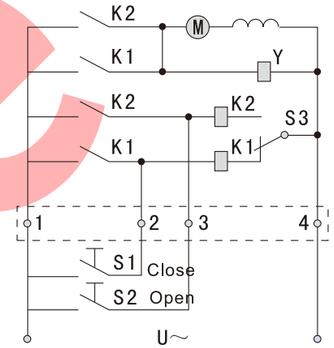
DC Circuit Breaker

NQCM1(B)

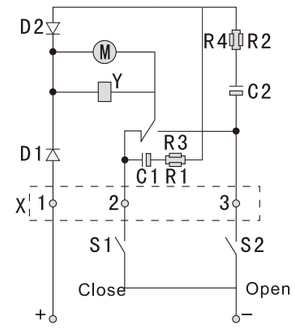
NQCM1-400, NQCM1-630, MQCM1-800, MQCM1-1250 Opening and closing principle diagram of electric operating mechanism (AC/DC)



AC power common wiring diagram



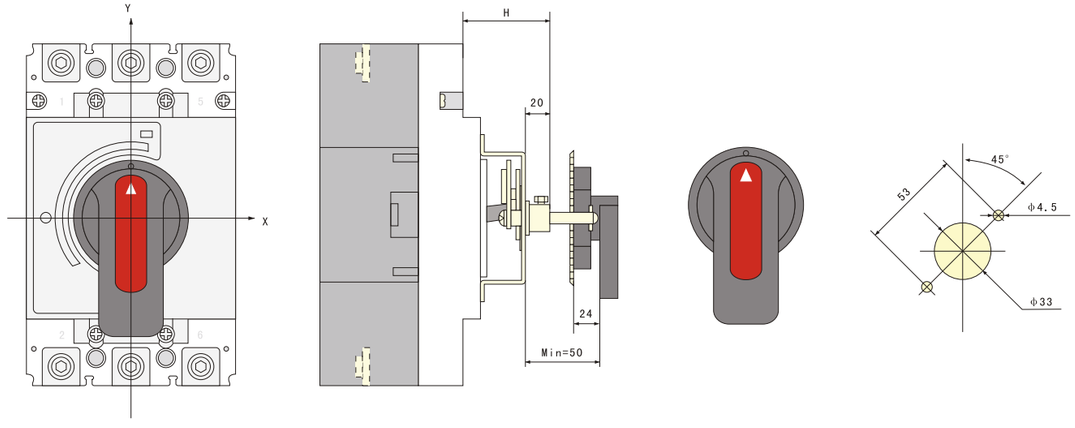
Self-locking circuit wiring diagram



DC power common wiring diagram

2, Manual operation mechanism

NQCM1-63,125, 400, 630, 800, 1250 Schematic diagram of the opening of the manual operating mechanism



DC Circuit Breaker

NQCM1(B)

Model	Electric operating mechanism height H	Manual operating mechanism installation size H
NQCM1-63(L)	155	49
NQCM1-63M, QCM1-63H	164	49
NQCM1-125(L)	152	51
NQCM1-125M, NQCM-125H	170	51
NQCM1-250(L)	182	54
NQCM1-250M, NQCM1Z-250H	199	54
NQCM1-400(L), NQCM-400M, NQCM1-400H	255	88
NQCM1-630(M), NQCM1-630H	262	89
NQCM1-800(M), NQCM1-800H	261	96
NQCM1-1250(H)	290	103

Order Introduction

1. The user should indicate the product model, tripping type, rated current, number of poles, accessories and quantity of the circuit breaker when ordering.
2. For example: NQCM1 circuit breaker 2P 125A DC500V with shunt release 100 pieces.
3. If the user has special requirements, such as customized printing, it can be negotiated separately.

Appendix I

Product selection datasheet

1P

2P

3P

4P

Product Model	Poles	Voltage	Current	Order Code	Customized
NQCM1(B)	1P	DC12-120V	63A	NQPD-0301-1PDCLR1001	No
	1P	DC12-120V	80A	NQPD-0301-1PDCLR1002	No
	1P	DC12-120V	100A	NQPD-0301-1PDCLR1003	No
	1P	DC12-120V	125A	NQPD-0301-1PDCLR1004	No
	1P	DC12-120V	160A	NQPD-0301-1PDCLR1005	No
	1P	DC12-120V	200A	NQPD-0301-1PDCLR1006	No
	1P	DC12-120V	250A	NQPD-0301-1PDCLR1007	No
	1P	DC12-120V	300A	NQPD-0301-1PDCLR1008	No
	1P	DC12-120V	400A	NQPD-0301-1PDCLR1009	No
	1P	DC12-120V	500A	NQPD-0301-1PDCLR1010	No
	1P	DC12-120V	600A	NQPD-0301-1PDCLR1011	No
	2P	DC12-120V	63A	NQPD-0301-2PDCLR1001	No
	2P	DC12-120V	80A	NQPD-0301-2PDCLR1002	No
	2P	DC12-120V	100A	NQPD-0301-2PDCLR1003	No
	2P	DC12-120V	125A	NQPD-0301-2PDCLR1004	No
	2P	DC12-120V	160A	NQPD-0301-2PDCLR1005	No
	2P	DC12-120V	200A	NQPD-0301-2PDCLR1006	No
	2P	DC12-120V	250A	NQPD-0301-2PDCLR1007	No
	2P	DC12-120V	300A	NQPD-0301-2PDCLR1008	No
	2P	DC12-120V	400A	NQPD-0301-2PDCLR1009	No
	2P	DC12-120V	500A	NQPD-0301-2PDCLR1010	No
	2P	DC12-120V	600A	NQPD-0301-2PDCLR1011	No
	3P	DC12-120V	63A	NQPD-0301-3PDCLR1001	Yes
	3P	DC12-120V	80A	NQPD-0301-3PDCLR1002	Yes
	3P	DC12-120V	100A	NQPD-0301-3PDCLR1003	Yes
	3P	DC12-120V	125A	NQPD-0301-3PDCLR1004	Yes
	3P	DC12-120V	160A	NQPD-0301-3PDCLR1005	Yes
	3P	DC12-120V	200A	NQPD-0301-3PDCLR1006	Yes
	3P	DC12-120V	250A	NQPD-0301-3PDCLR1007	Yes

Product Model	Poles	Voltage	Current	Order Code	Customized
NQCM1(B)	3P	DC12-120V	300A	NQPD-0301-3PDCLR1008	Yes
	3P	DC12-120V	400A	NQPD-0301-3PDCLR1009	Yes
	3P	DC12-120V	500A	NQPD-0301-3PDCLR1010	Yes
	3P	DC12-120V	600A	NQPD-0301-3PDCLR1011	Yes
	4P	DC12-120V	63A	NQPD-0301-4PDCLR1001	Yes
	4P	DC12-120V	80A	NQPD-0301-4PDCLR1002	Yes
	4P	DC12-120V	100A	NQPD-0301-4PDCLR1003	Yes
	4P	DC12-120V	125A	NQPD-0301-4PDCLR1004	Yes
	4P	DC12-120V	160A	NQPD-0301-4PDCLR1005	Yes
	4P	DC12-120V	200A	NQPD-0301-4PDCLR1006	Yes
	4P	DC12-120V	250A	NQPD-0301-4PDCLR1007	Yes
	4P	DC12-120V	300A	NQPD-0301-4PDCLR1008	Yes
	4P	DC12-120V	400A	NQPD-0301-4PDCLR1009	Yes
	4P	DC12-120V	500A	NQPD-0301-4PDCLR1010	Yes
	4P	DC12-120V	600A	NQPD-0301-4PDCLR1011	Yes

Remark:
1, "Customized products" (gray marked), cannot be ordered directly, you need to determine the quantity, price and order cycle before ordering,
2, Customized products does not support returns and exchanges.