



9 Accessories characteristics and installation

NM8N moulded case circuit breaker has various accessory modules, which can be found in P84 for more details

9.1 AX Auxiliary contact

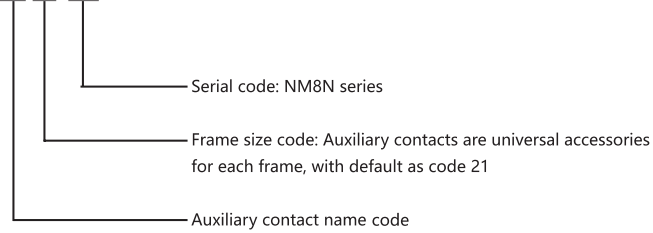
9.1.1 Function

Remotely indicate the circuit breaker's making (on) or breaking / tripping (OFF) status, connected to the auxiliary circuit of the circuit breaker.

9.1.2 Model description



AX 21-M8



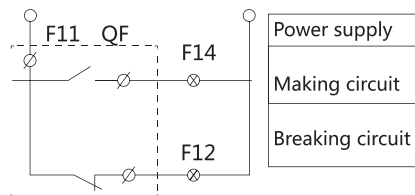
9.1.3 Indication of circuit breaker status

Circuit breaker is at breaking status	F12 ———— ———— F11
Circuit breaker is at making status	F12 ———— ———— F11

9.1.4 Electrical characteristics

Rated voltage (V)	Rated current (A)	
	AC-15	DC-13
AC 110	5	—
AC 240	4	—
AC 415	2	—
DC 110	—	0.25
DC 220	—	0.25

9.1.5 Wiring diagram





9.2 AL Alarm contact

9.2.1 Function

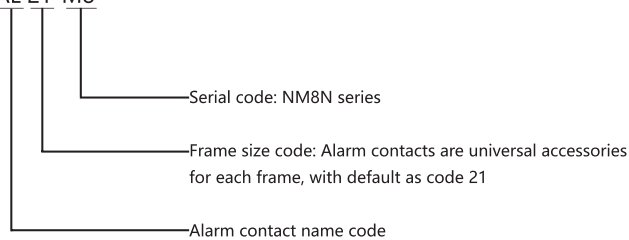
It is mainly used to provide a signal when the load of the circuit breaker is overloaded, short-circuited or undervoltage, or tripped.

The reasons for the failure of the alarm signal are:

- Over-load or short-circuit
- Undervoltage trip
- Residual current action trip
- Manual free trip

9.2.2 Model description

AL 21-M8



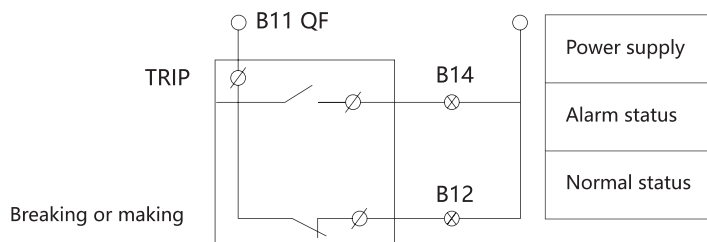
9.2.3 Indication of circuit breaker status

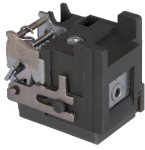
Circuit breaker is at breaking or making status	B12 ———— B11 B14 ————
Circuit breaker is at free tripping status	B12 ———— B11 B14 ————

9.2.4 Electrical characteristics

Rated voltage(V)	Rated current(A)	
	AC-15	DC-13
AC 110	5	—
AC 240	4	—
AC 415	2	—
DC 110	—	0.25
DC 220	—	0.25

9.2.5 Wiring diagram





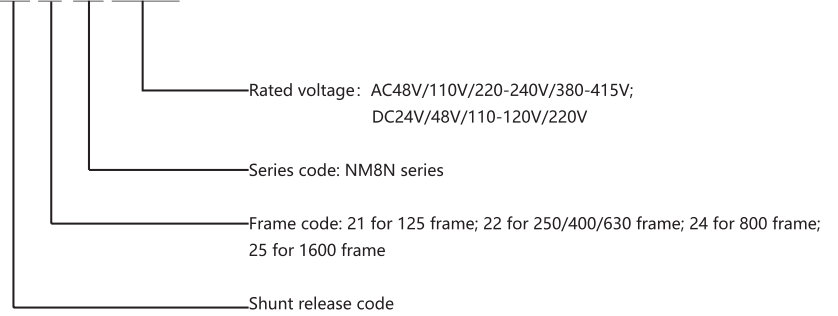
9.3 SHT Shunt release

9.3.1 Function

Shunt releases operate according to electrical signals, enabling remote control and automatic control of circuit breakers. When the supply voltage is equal to any voltage between 70% and 110% of the rated control power supply voltage, the shunt release should enable the circuit breaker to operate reliably.

9.3.2 Model description

SHT 21-M8 AC48V



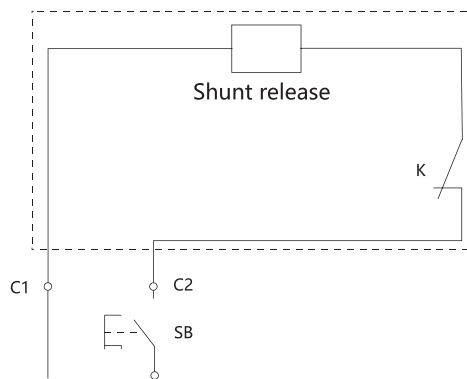
9.3.3 Electrical characteristics

Frame size	Power consumption (W)						
	AC48V	AC110V	AC220-240V	AC380-415V	DC24V	DC48V	DC220V
125A	2.2	2.2	2	2.5	2.5	2.2	2
250/400/630A	2.3	2.5	2.2	2.5	2.2	2.5	2.5
800A	2.3	2.5	2.2	2.5	2.2	2.5	2.5
1600A	110	195	480	560	230	110	160

9.3.4 Action characteristics

Can be powered for a long time. Response time: pulse type $\geq 20\text{ms}$, $\leq 60\text{ms}$

9.3.5 Wiring diagram



Note: When the rated control power supply voltage DC24V shunt release is used, the maximum length of the copper wire (each of the two wires) must meet the following table:

Rated control supply voltage U_s (DC24V)	Conductor cross-sectional area	
	1.5mm ²	2.5mm ²
100% U_s	150m	250m
85% U_s	100m	160m

9.4 UVT Under-voltage release



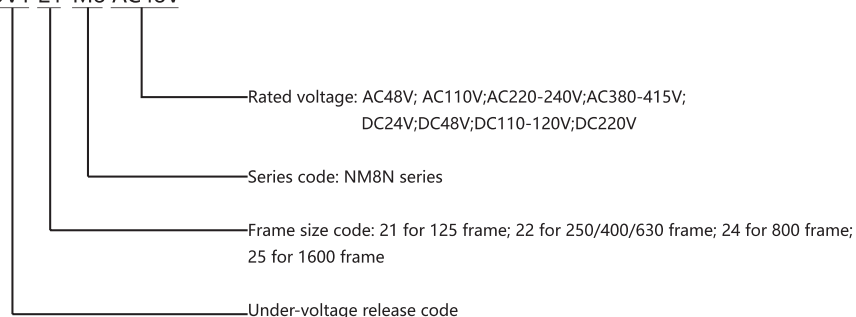
9.4.1 Function

Realize the under-voltage protection function of the circuit breaker, open the circuit breaker when the power supply voltage is too low, and protect the electrical equipment.

- When the supply voltage drops (even slowly) to 70% to 35% of the rated control supply voltage, the undervoltage trips. The breaker should open the circuit breaker reliably.
- When the supply voltage is equal to or greater than 85% of the rated control supply voltage of the undervoltage release, the circuit breaker should be guaranteed to close.
- When the supply voltage is less than 35% of the rated control supply voltage of the undervoltage release, the undervoltage release should prevent the circuit breaker.

9.4.2 Model description

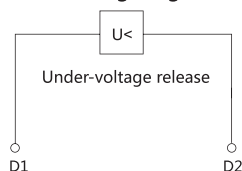
UVT 21-M8 AC48V



9.4.3 Electrical characteristics

Frame size	Power consumption (W)							
	AC48V	AC110V	AC220-240V	AC380-415V	DC24V	DC48V	DC110-120V	DC220V
125A	1.6	1.6	2	3	1.2	1.6	2	2.2
250/400/630A	1.5	1.5	2.2	3	0.8	1.5	2	2.5
800A	1.5	1.5	2.2	3	0.8	1.5	2	2.5
1600A	2.6	2.2	1.7	0.7	2.8	2.5	2.2	1.8

9.4.4 Wiring diagram





9.5 MOD Motor-driven mechanism

9.5.1 Function

It is suitable for closing, opening and re-opening of circuit breakers at long distances, as well as automation applications.

A: Protection level: IP40

- Reliable insulation;
- With isolation function indication;
- O (open), I (closed) and free trip 3 position indications;
- Free circuit breaker trip;
- Manually or automatically operated circuit breakers for closing and opening.

B: manual operation

Pull the "manual / auto" switch to the manual position and turn the operation handle to switch on and off the circuit breaker.

C: automatic operation

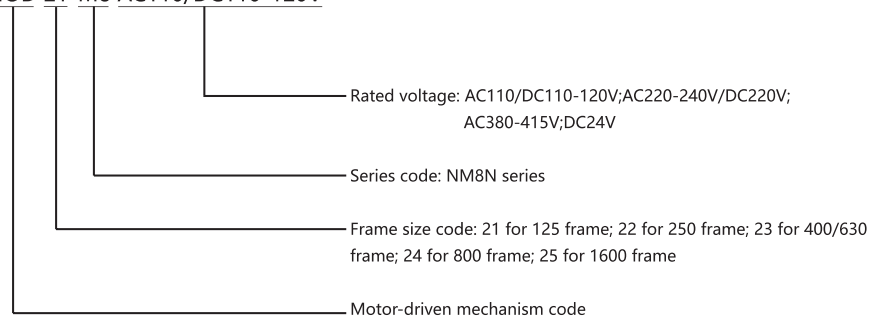
Pull the "manual / auto" switch to the automatic position, and remotely press the "close or open" button to switch on and off the circuit breaker.

D: Automatically switch on or off by pulse or self-holding signal control.

E: Only when the control voltage is $\geq 85\% U_n$ and $\leq 110\% U_n$ can the circuit breaker be reliably switched on and off.

9.5.2 Model description

MOD 21-M8 AC110/DC110-120V



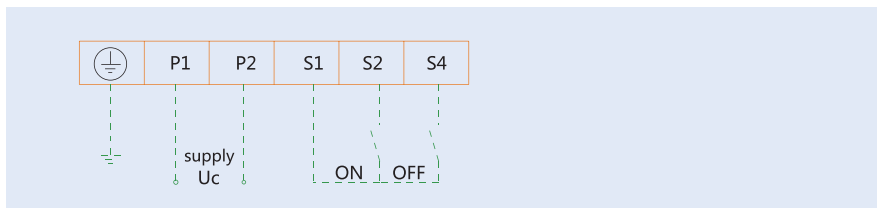
Note: The 1600 frame motor-driven mechanism is assembled in the factory and is suitable for electronic circuit breakers and disconnectors according to the inside of the circuit breaker.

9.5.3 Electrical characteristics

9.5.3 Electrical characteristics

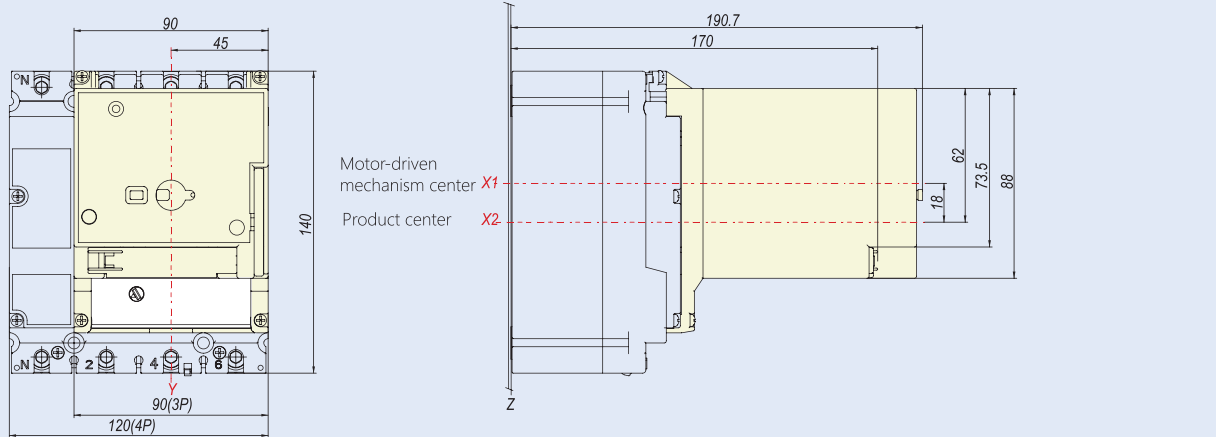
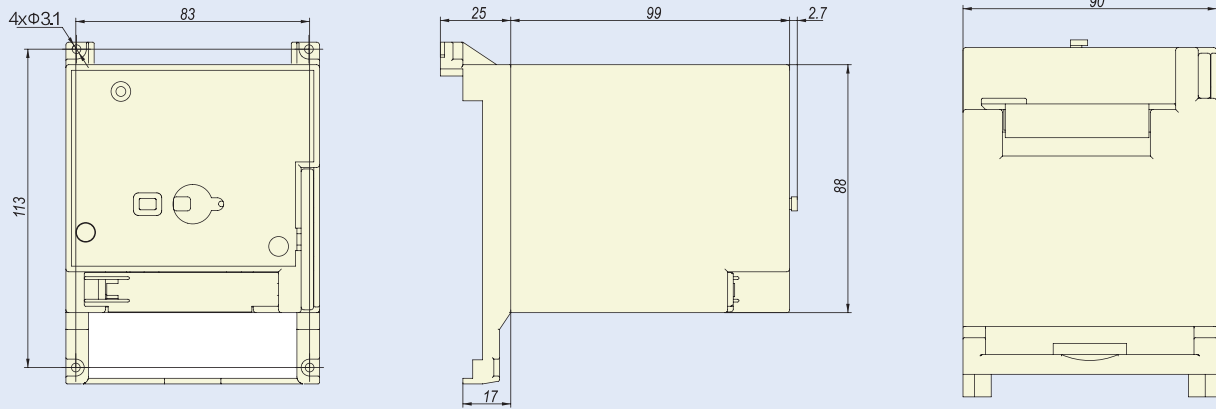
Frame size	Operational Type	Rated operational voltage	Life (CO recycle)	Power consumption	Action current	Making duration	Breaking duration	Minimum duration of ON(OFF) signal pulse
125A	MOD 21-M8	AC110V/DC110 AC220-240V DC220V AC380-415V DC24V	10000	150 150 150 100	≥ 3 ≥ 4	$\leq 500\text{ms}$	$\leq 500\text{ms}$	300ms
250A	MOD 22-M8	AC110V/DC110 AC220-240V DC220V AC380-415V DC24V	10000	150 150 150 100	≥ 3 ≥ 4	$\leq 500\text{ms}$	$\leq 500\text{ms}$	300ms
400/630A	MOD 2-M8	AC110V/DC110 AC220-240V DC220V AC380-415V DC24V	8000	300 300 300 190	≥ 3 ≥ 8	$\leq 1000\text{ms}$	$\leq 1000\text{ms}$	300ms
800A	MOD 23-M8	AC110V/DC110 AC220-240V DC220V AC380-415V DC24V	4000	300 300 300 190	≥ 3 ≥ 8	$\leq 1000\text{ms}$	$\leq 1000\text{ms}$	300ms

9.5.4 Wiring diagram

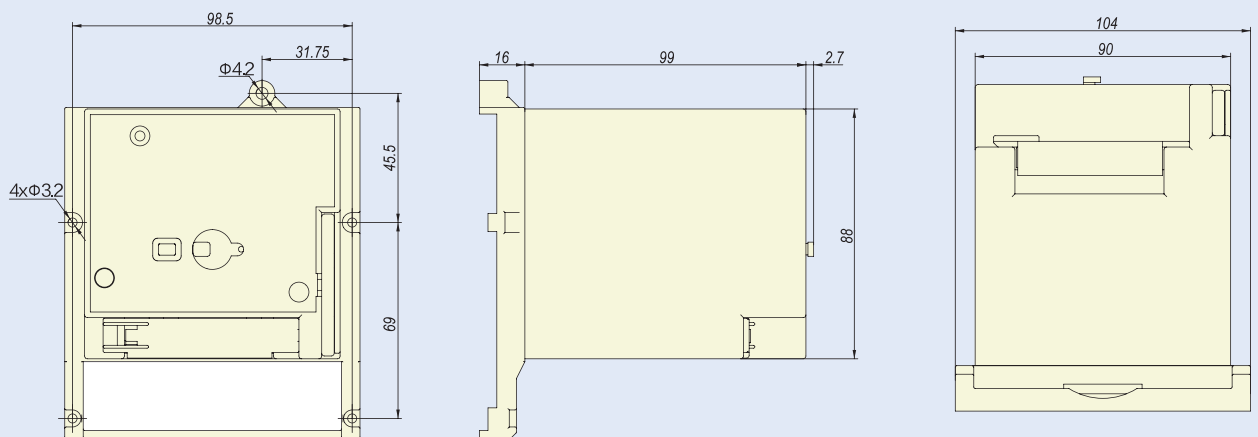


9.5.5 Installation dimension drawing

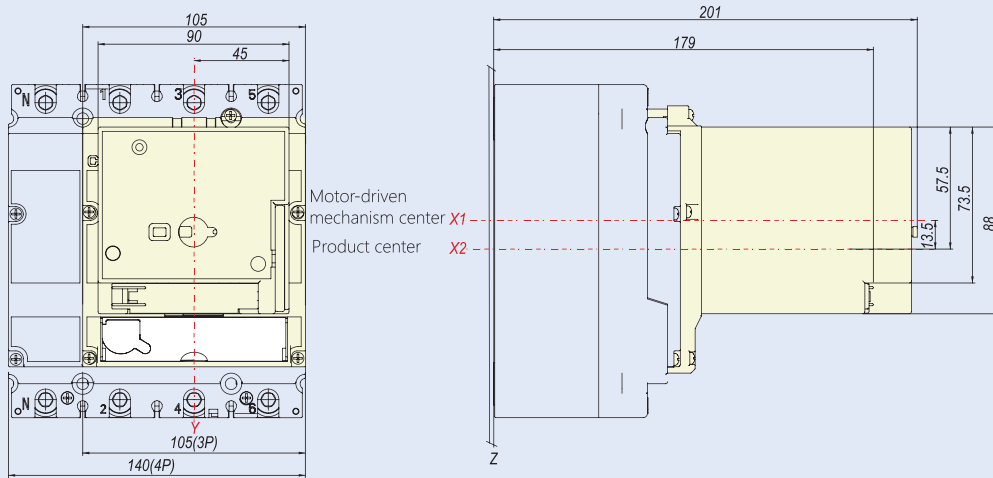
Overall and mounting dimension of MOD21-M8



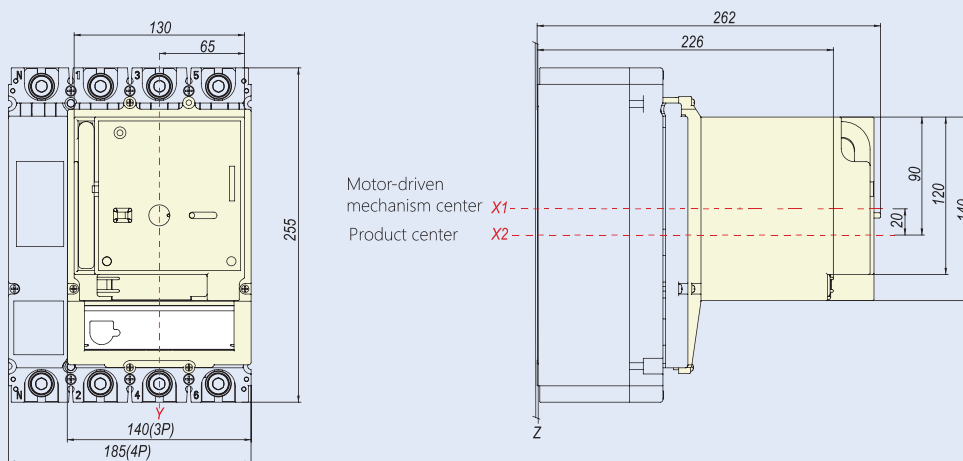
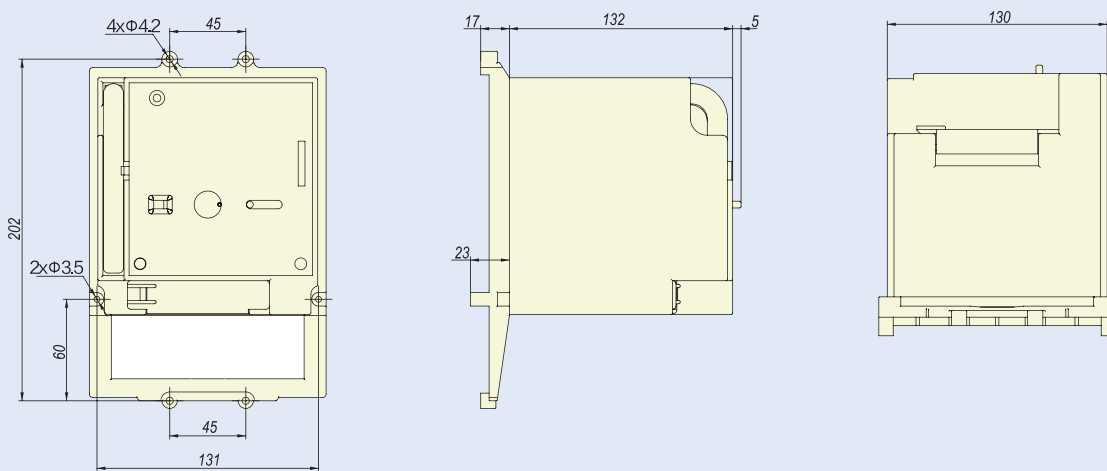
Overall dimension of MOD22-M8



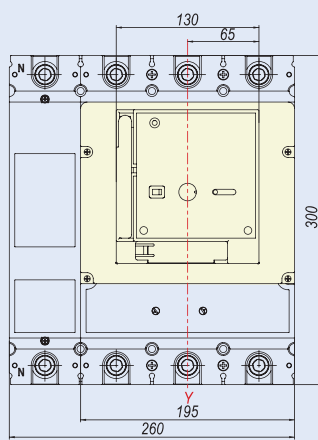
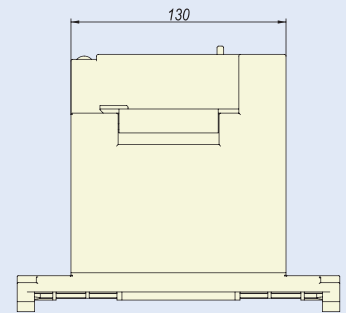
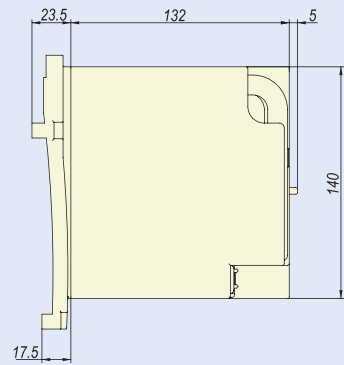
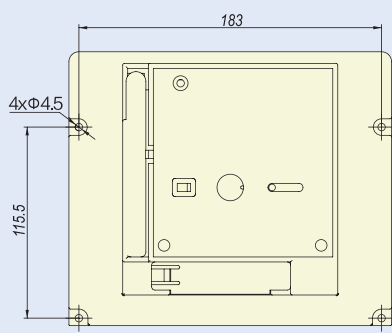
Mounting dimension of MOD22-M8



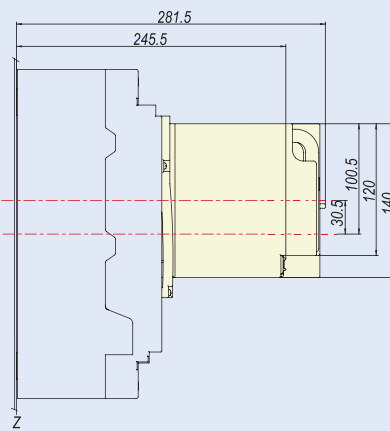
Overall and mounting dimension of MOD23-M8



Overall and mounting dimension of MOD24-M8



Motor-driven
mechanism center X1
Product center X2



B

9.6 SRH Economic extended rotary handle

9.6.1 Function

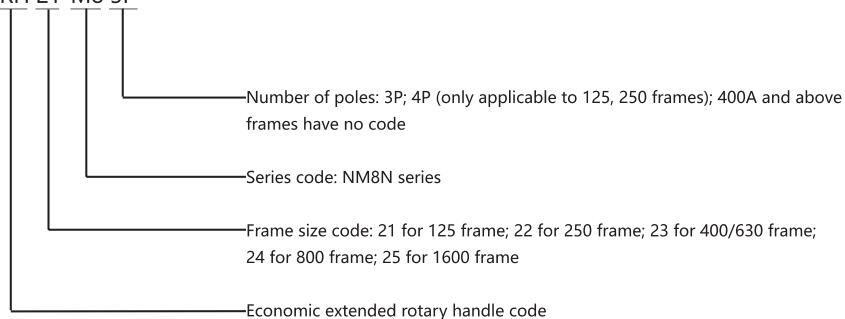
The unique design and transmission structure are adopted to realize the closing, opening and re-closing operation of the circuit breaker by rotating the handle.

Protection degree: IP30

- With isolation function indication;
- O (open), I (closed) and free trip 3 position indications;
- The circuit breaker can be locked in the OFF position with 1 ~ 3 padlocks with a diameter of 5 ~ 8mm. At this time, it can prevent the circuit breaker from closing and the switch cabinet from opening;
- When the switch is in the ON position, the cabinet door cannot be opened under the action of the rotary handle (if the cabinet door is opened urgently, the cabinet door can be opened by the emergency unlocking device on the handle).

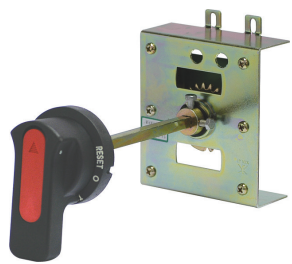
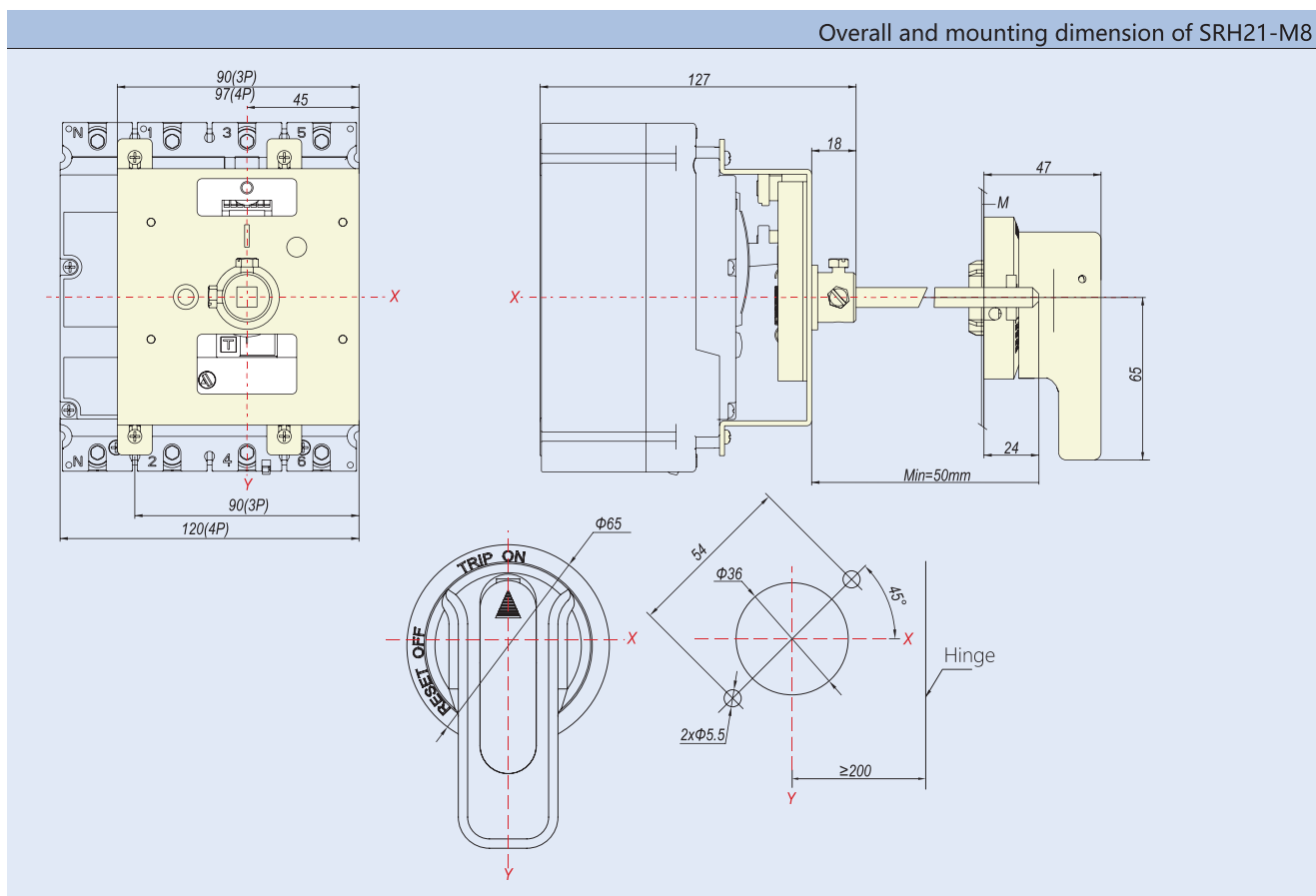
9.6.2 Model description

SRH 21-M8 3P

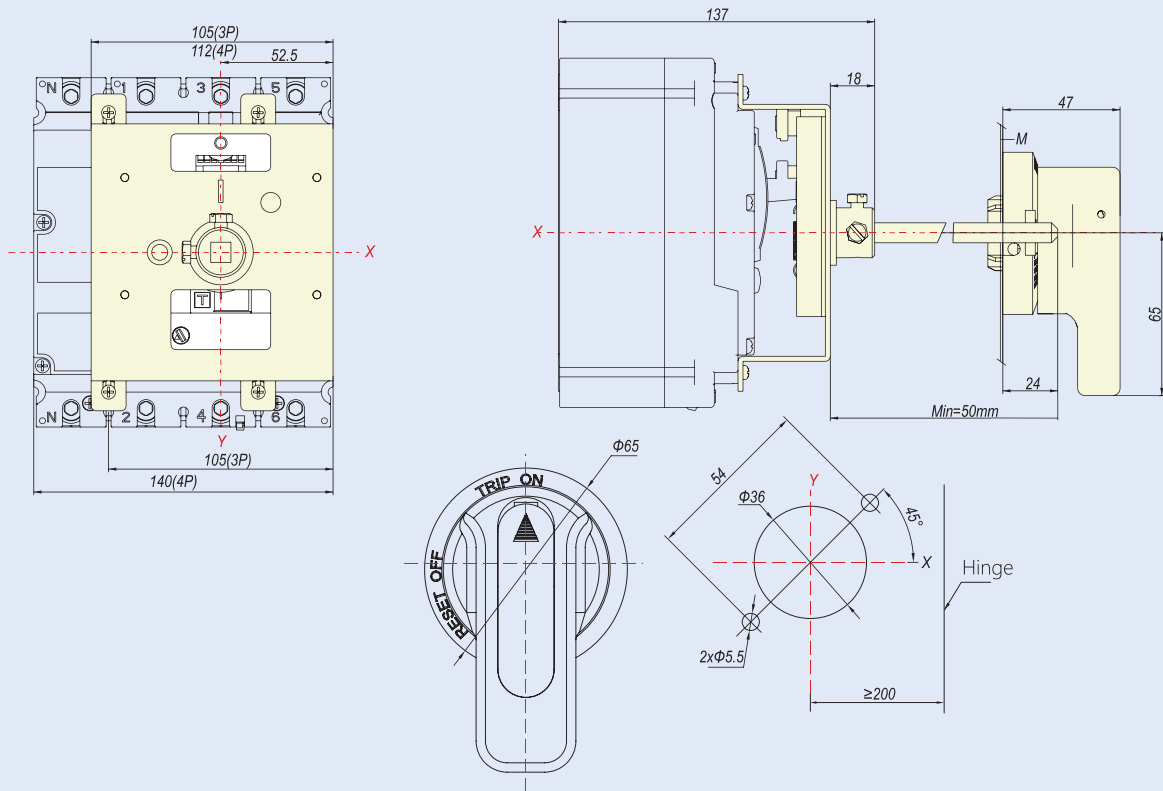


9.6.3 Installation dimension drawing

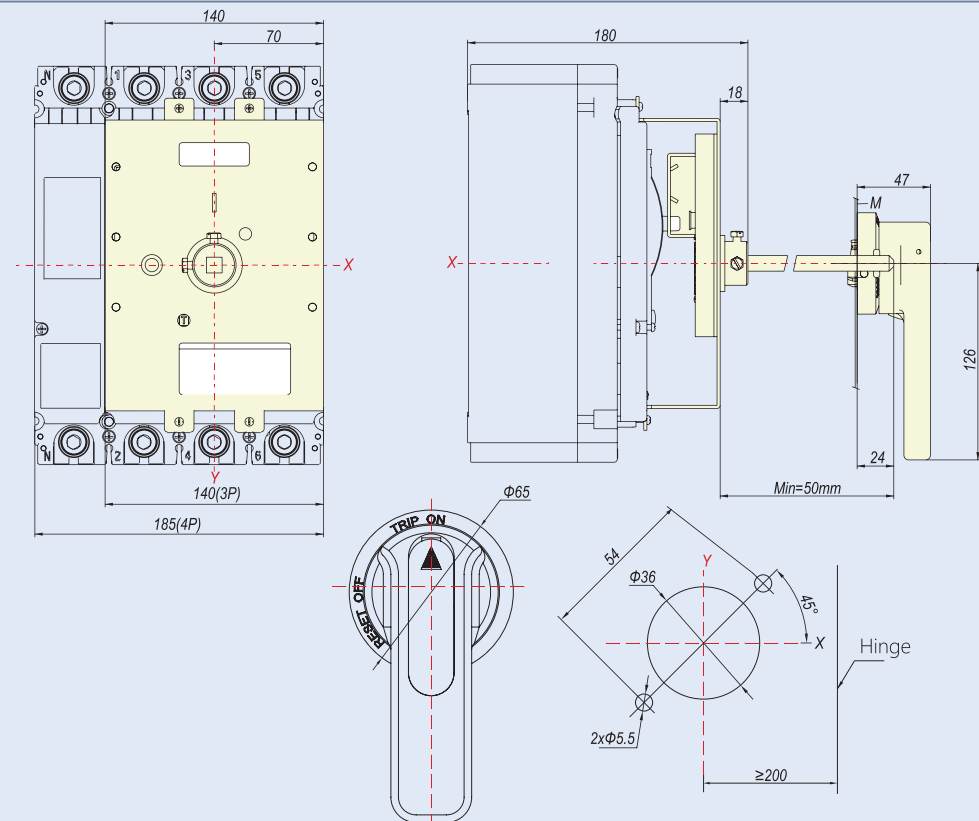
Overall and mounting dimension of SRH21-M8



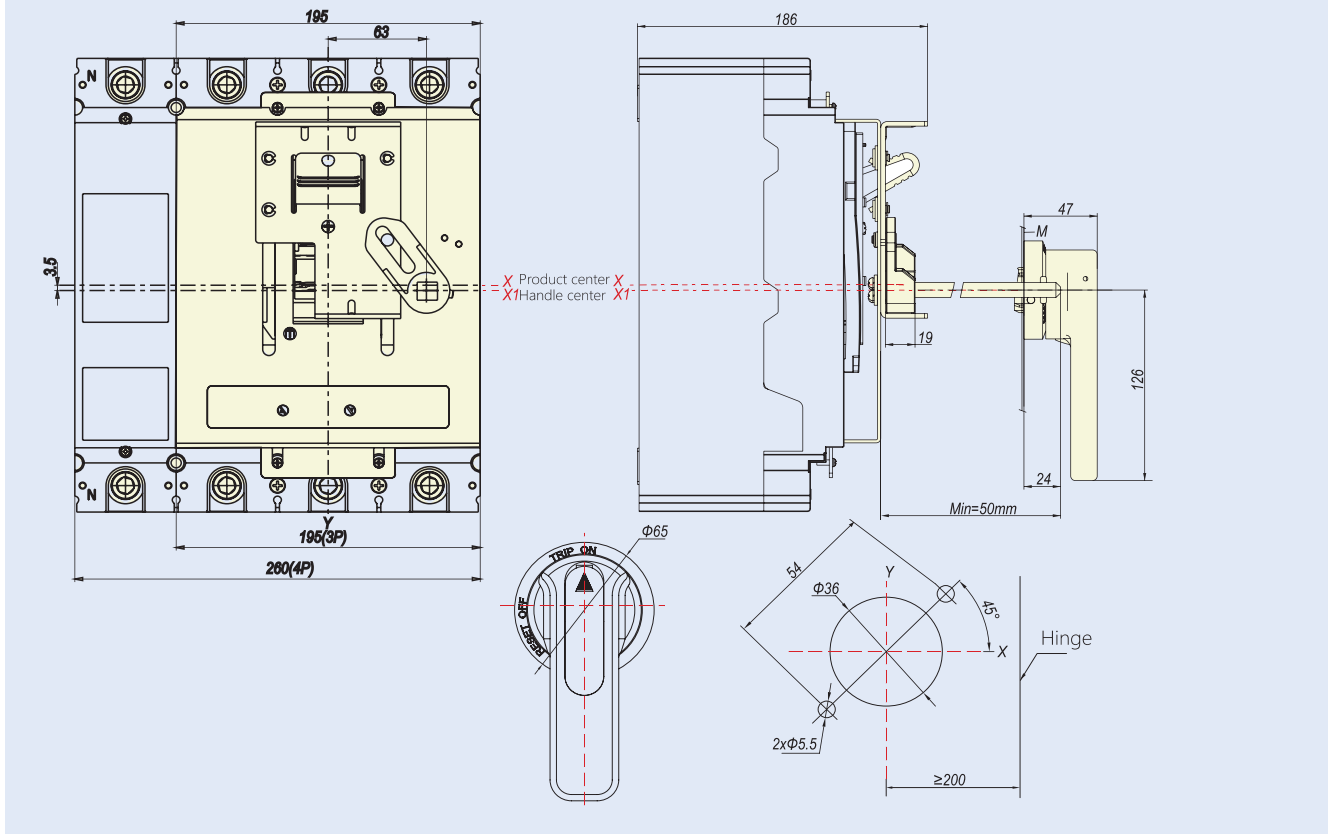
Overall and mounting dimension of SRH22-M8



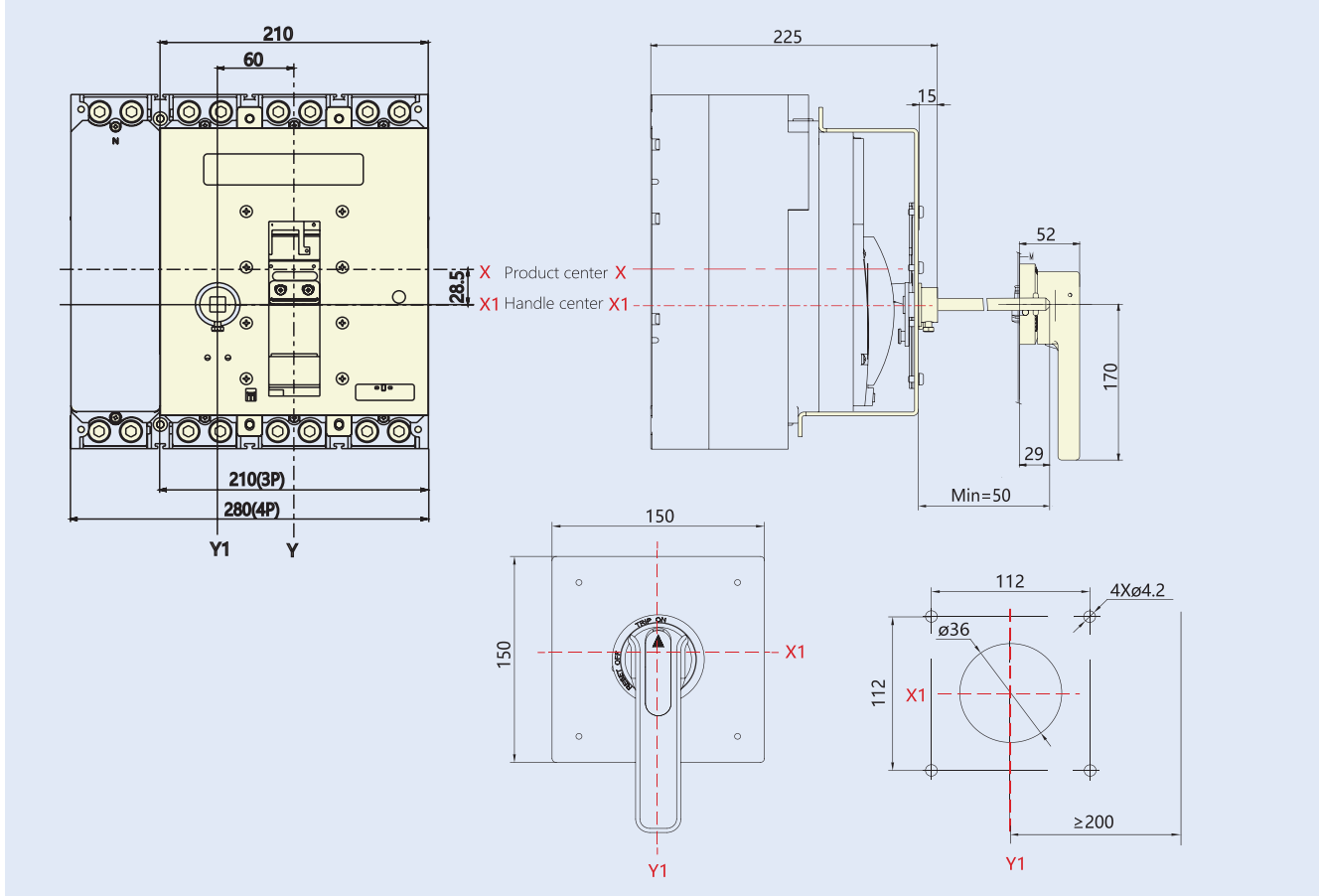
Overall and mounting dimension of SRH23-M8



Overall and mounting dimension of SRH24-M8



Overall and mounting dimension of SRH25-M8



9.7 DRH Direct rotary handle

9.7.1 Function

The unique design and transmission structure are adopted to realize the closing, opening and re-closing operation of the circuit breaker by rotating the handle.

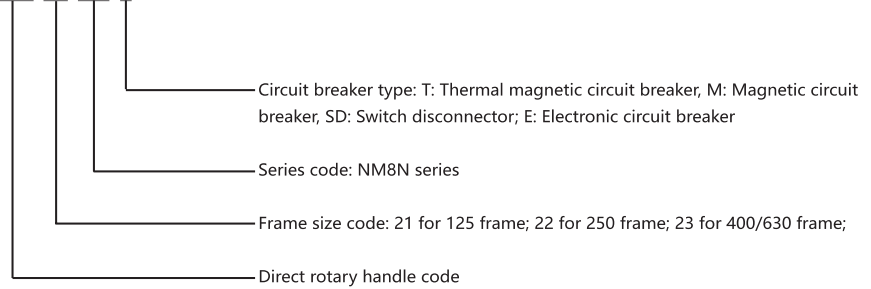
Protection degree: IP40

- Reliable insulation;
- With isolation function indication;
- O (open), I (closed) and free trip 3 position indications;
- The circuit breaker can be locked in the OFF position through 1~3 padlocks with a diameter of 5 ~ 8mm.
- (Padlock user prepared)



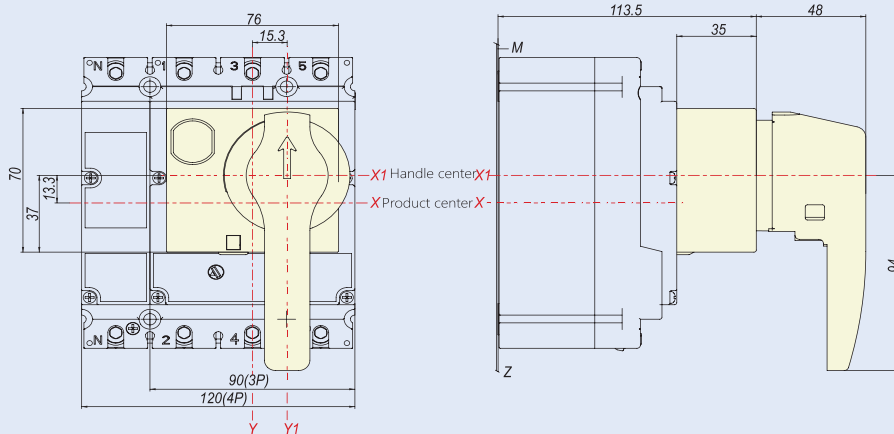
9.7.2 Model description

DRH 21-M8 T

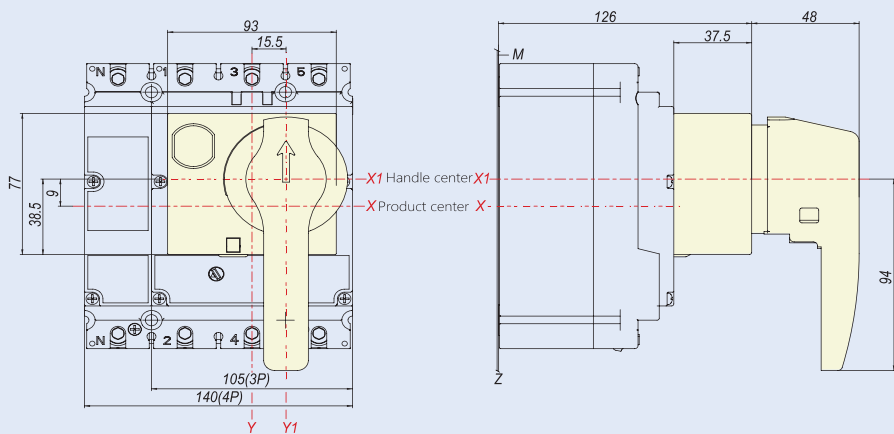


9.7.3 Installation dimension drawing

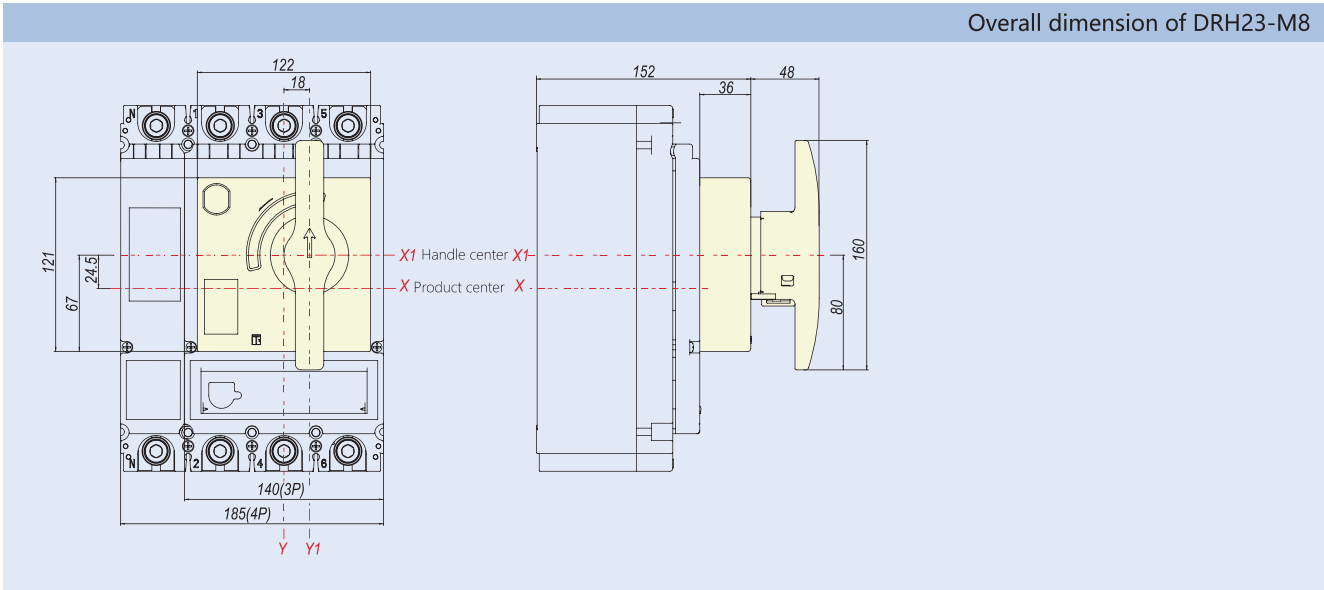
Overall dimension of DRH21-M8



Overall dimension of DRH22-M8



Overall dimension of DRH23-M8



9.8 ERH Extended rotary handle

9.8.1 Function

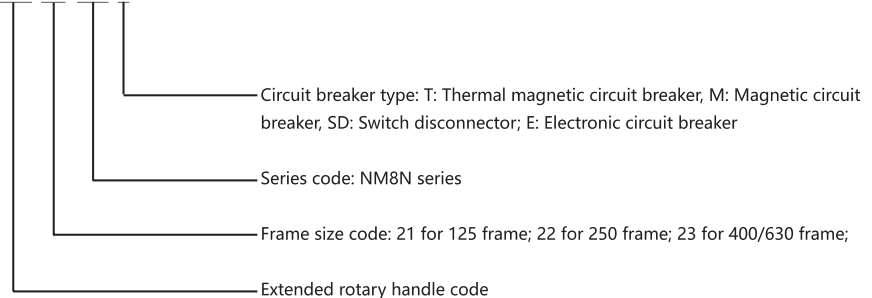
The unique design and transmission structure are adopted to realize the closing, opening and re-closing operation of the circuit breaker by rotating the handle.

Protection degree: IP50

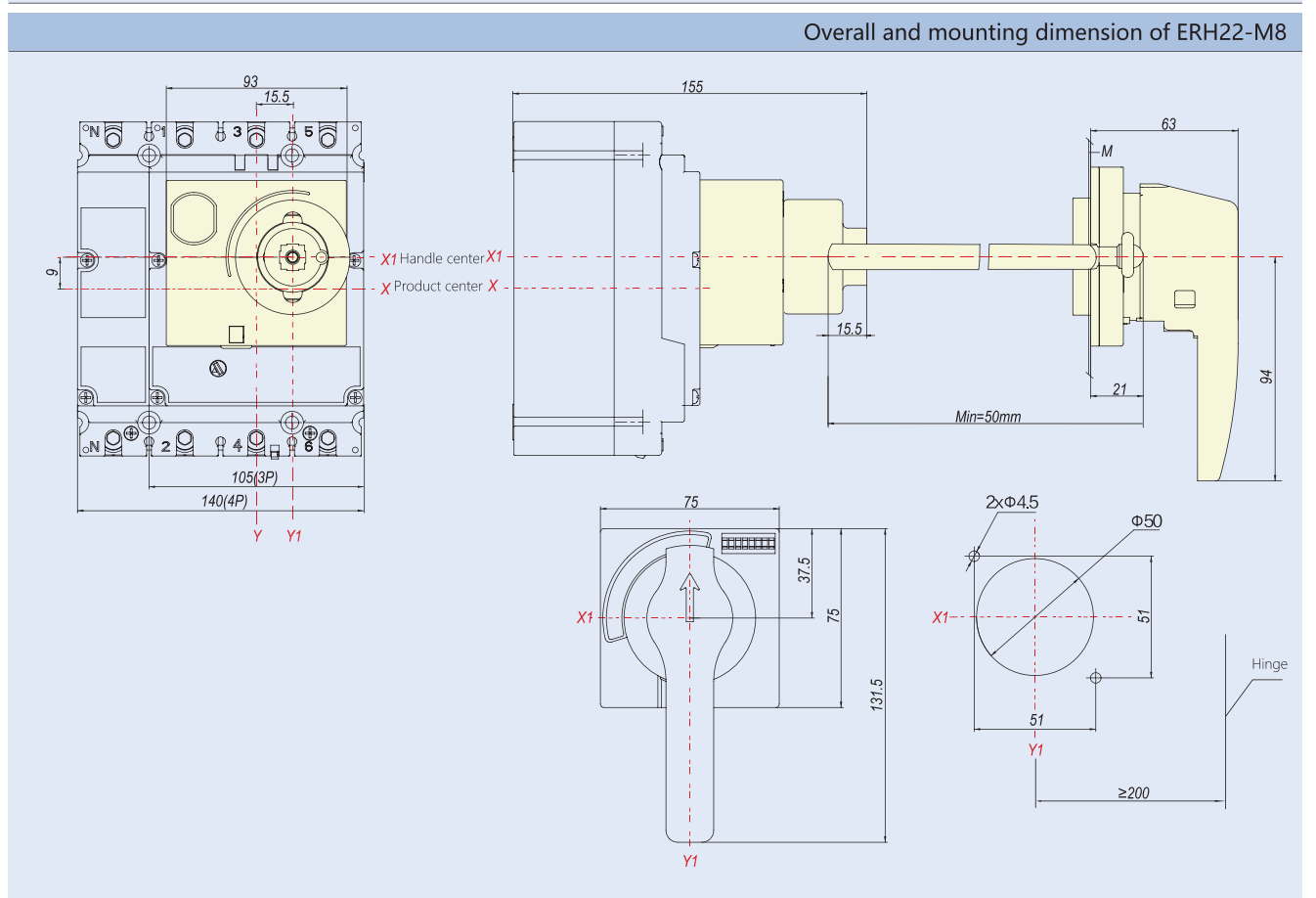
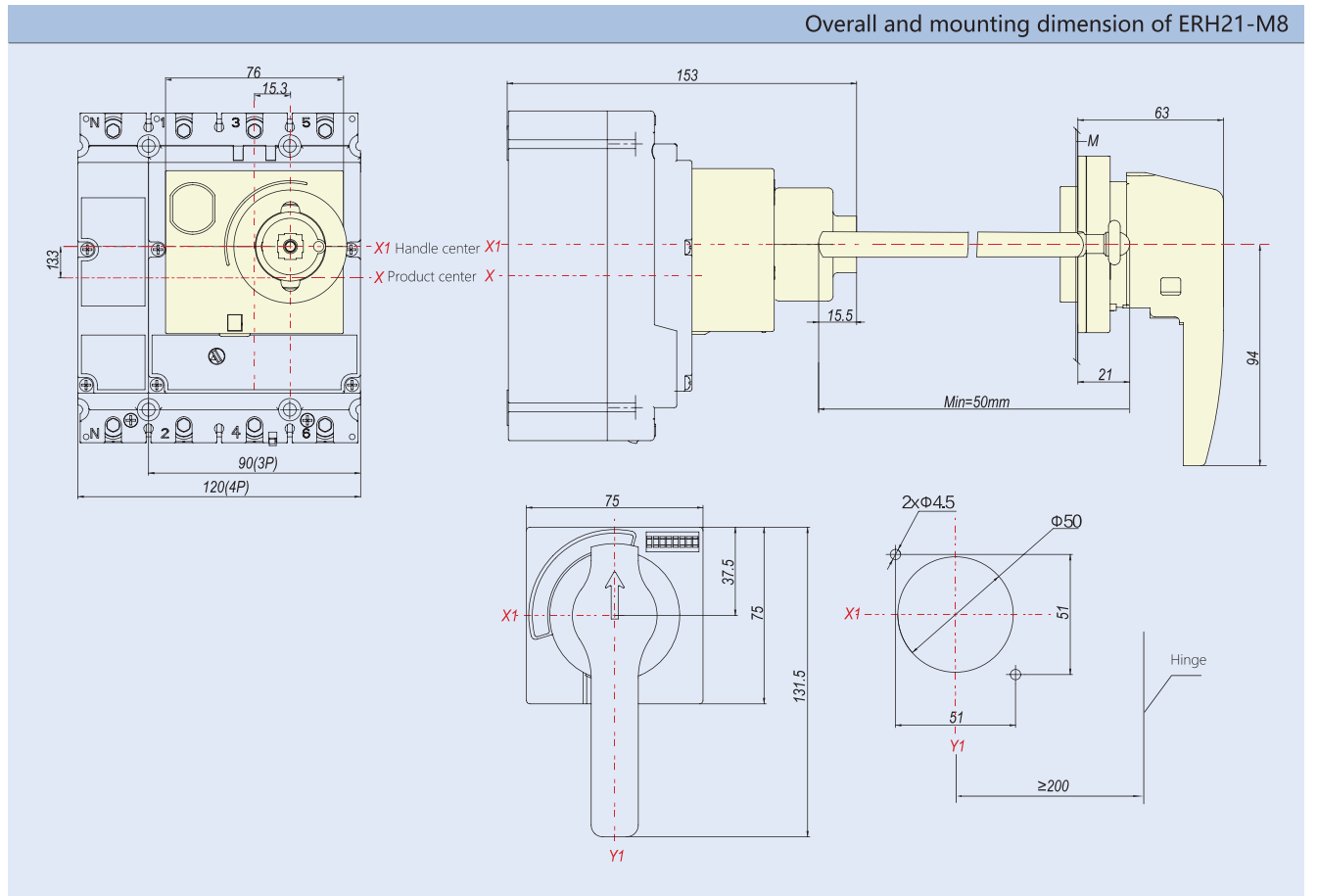
- Reliable insulation;
- With isolation function indication;
- O (open), I (closed) and free trip 3 position indications;
- When the switch cabinet door is open, the setting value of the circuit breaker release can be set;
- When the switch cabinet door is opened, it can prevent the circuit breaker from closing;
- The circuit breaker can be locked in the OFF position through (1 ~ 3) padlocks with a diameter of (5 ~ 8) mm;
- (Padlock user prepared) can prevent the switch cabinet door from opening at this time;
- When the switch is in the ON position, the cabinet door cannot be opened under the action of the rotary handle (if the cabinet door is opened urgently, the cabinet door can be opened by the emergency unlocking device on the handle).

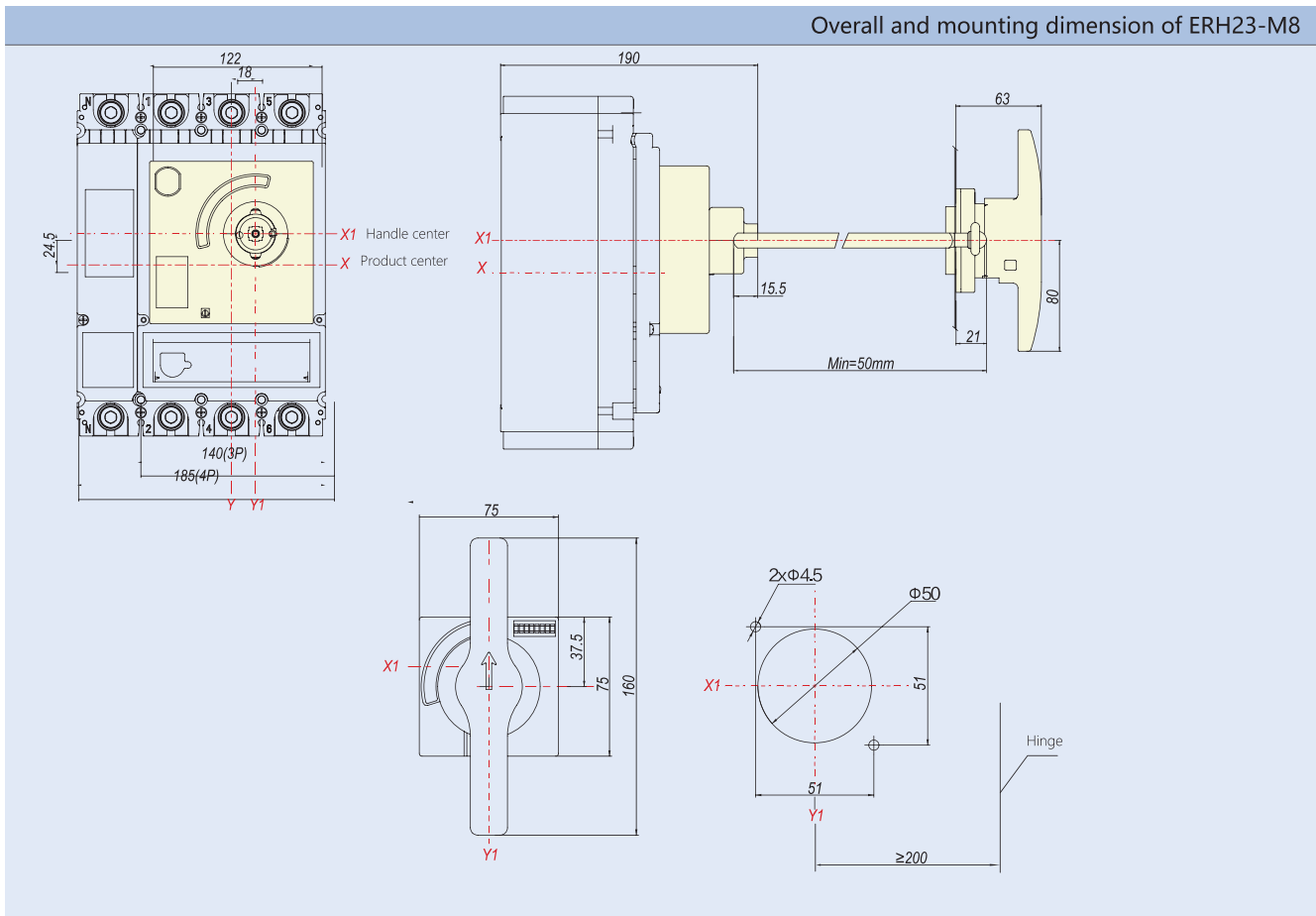
9.8.2 Model description

ERH 21-M8 T



9.8.3 Installation dimension drawing





9.9 LHD Extended handle

9.9.1 Function

With a unique design, the circuit breaker can be closed, opened and re-latched by rotating the handle. It is only applicable to 1600A.

9.9.2 Model description

LHD 25-M8

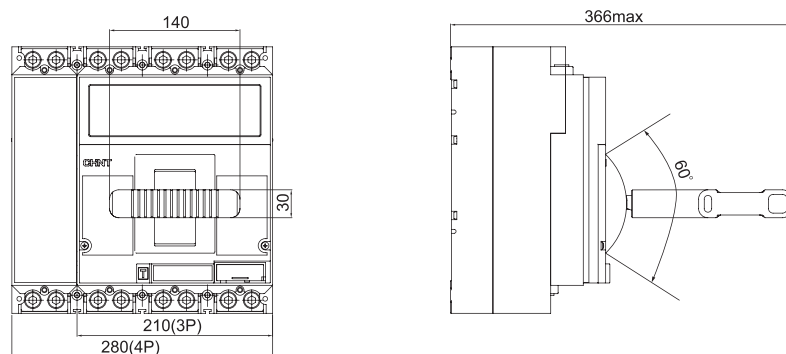
Series code: NM8N series

Frame size code: 25 for 1600 frame

Extended handle code



9.9.3 Overall dimension



9.10 KLK Locking system

9.10.1 Function

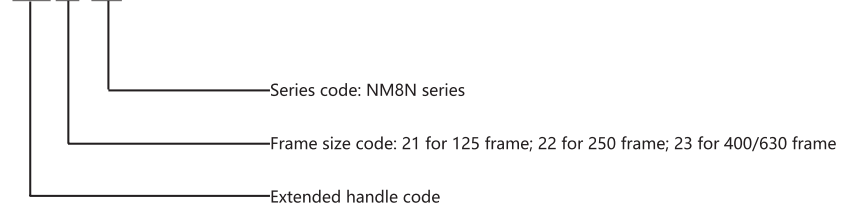
The locking system locks the open position of the circuit breaker.

- The locking system can be equipped with (1 ~ 3) padlocks with a diameter range (5 ~ 8) mm.
- (Padlock user prepared)



9.10.2 Model description

KLK 21-M8



9.11 MIT Mechanical interlock

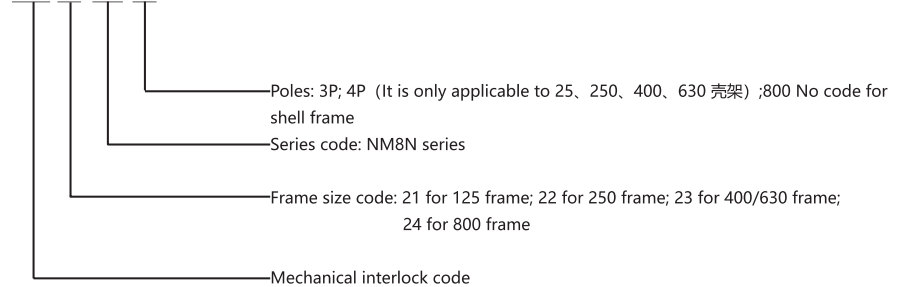
9.11.1 Function

When used together with two circuit breakers with the same housing, when one circuit breaker is closed, the other circuit breaker cannot be closed and is in the open state.



9.11.2 Model description

MIT 21-M8 3P



9.12 TCV Short terminal cover

9.12.1 Function

Prevents contact with the main circuit and can also be used to prevent short circuit between phases.

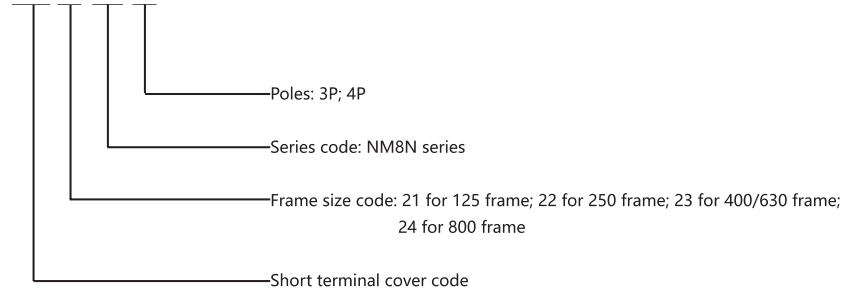
Protection degree: IP40

For voltages $\geq 500V$, terminal covers must be fitted



9.12.2 Model description

TCV 21-M8 3P



9.13 TCE Long terminal cover

9.13.1 Function

Prevents contact with the main circuit and can also be used to prevent short circuit between phases. There are knock-out holes in front of the terminal cover to accommodate various lug cables and front wiring.

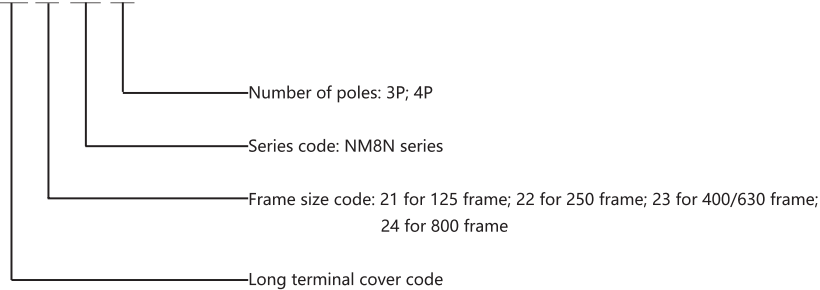
Protection degree: IP40

For voltages $\geq 500V$, terminal covers must be fitted



9.13.2 Model description

TCE 21-M8 3P



9.14 FCP Front connection plate

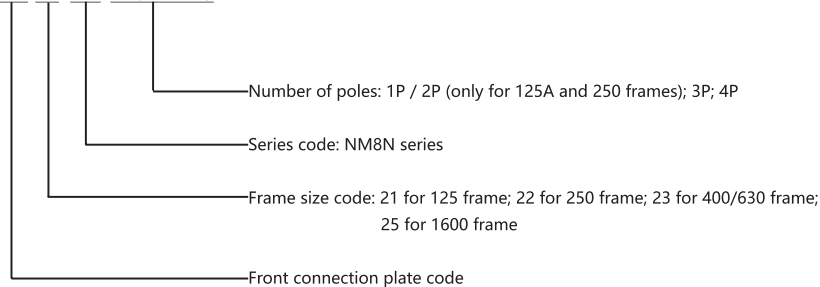
9.14.1 Function

Make the circuit breaker have a flexible wiring mode. By installing this accessory, the pole spacing can be increased to increase the electrical gap between adjacent poles at the inlet and outlet ends of the circuit breaker and enhance the safety between lines.



9.14.2 Model description

FCP 25-M8 3P(1600¹⁾)



Note ¹⁾: Only applicable to 1600 frame, there are three specifications of 1000, 1250, 1600

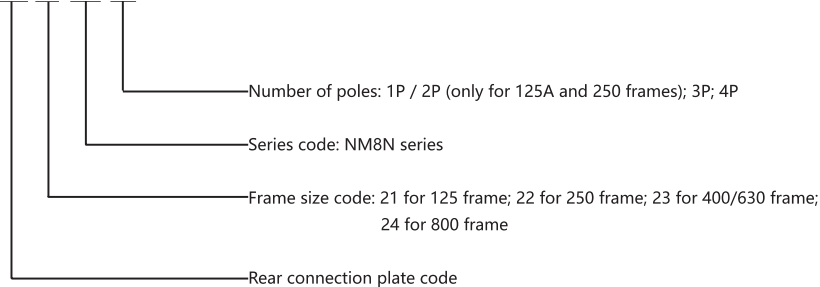
9.15 RCP Rear connection plate

9.15.1 Function

Make the circuit breaker have flexible wiring mode, which can realize the wiring behind the board

9.15.2 Model description

RCP 21-M8 2P

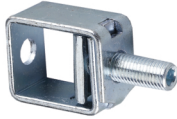


9.16 CCT Cage clamp terminal

9.16.1 Function

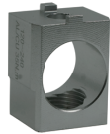
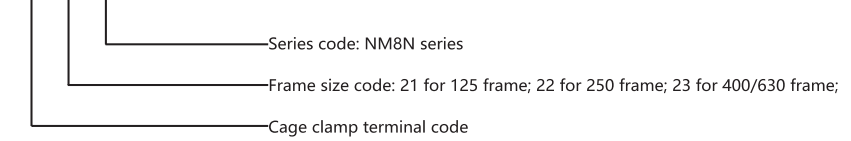
Make the circuit breaker have a flexible wiring mode, which can directly connect the bare wires.

9.16.2 Model description



CCT21/22-M8

CCT 21-M8



CCT23-M8

9.16.3 Wiring capacity

Serial No.	Wiring capacity	Torque
CCT21-M8	(2.5~75)mm ²	8N·m
CCT22-M8	(10~120)mm ²	10N·m
CCT23-M8	(120~240)mm ²	35N·m

9.17 MC Cable connector

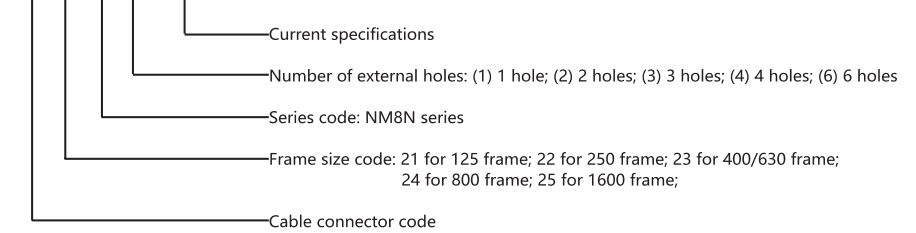
9.17.1 Function

Make the circuit breaker have a flexible wiring method, which can directly connect the bare wires and realize the connection of multiple wires.

9.17.2 Model description



MC 25-M8(3)(1250¹⁾)



Note¹⁾ : Only applicable to 1600 housing, only 800-1250 specifications

9.17.3 Wiring capacity

Serial No.	Wiring capacity	Torque	Note
MC21-M8 (1)	(16~95)mm ²	10N·m	1hole
MC22-M8 (1)	(35~240)mm ²	30N·m	1hole
MC22-M8 (2)	2x(35~120)mm ²	30N·m	2holes
MC22-M8 (6)	6x(10~35)mm ²	10N·m	6holes
MC23-M8 (2)	2x(120~240)mm ²	35N·m	2holes
MC23-M8 (4)	4x95mm ²	15N·m	4holes
MC24-M8 (2)	2x240mm ²	35N·m	2holes
MC25-M8(800) (3)	3x(95~300)mm ²	35N·m	3holes
MC25-M8(1000/1250) (4)	4x(95~240)mm ²	35N·m	4holes

9.18 PIA Plug-in base

9.18.1 Function

Quickly change the circuit breaker without changing the inlet and outlet wires and installing the base;

Plug-in base can be pre-installed, which is convenient for customers to add circuit breakers in the future;

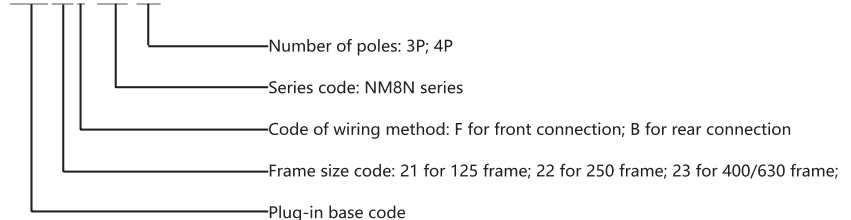
When the circuit breaker is installed through the board or the base, the power circuit can be isolated;

With plug-in safety device function (optional), it can ensure that the circuit breaker can trip automatically when it is pulled out when the circuit breaker is closed.

9.18.2 Model description



PIA 21F-M8 3P



9.19 PISD Plug-in safety device

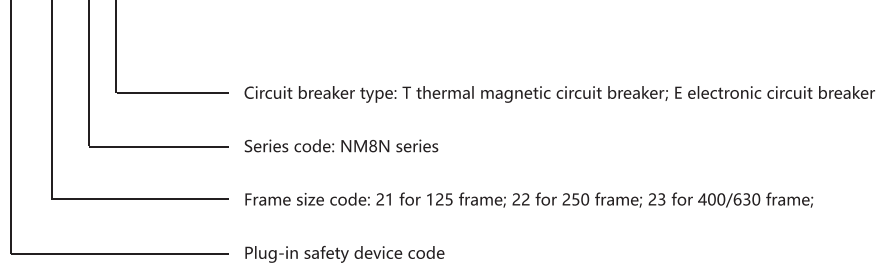
9.1 Function

Used together with the plug-in base, it can ensure that the circuit breaker can automatically trip when it is pulled out when the circuit breaker is closed.

9.2 Model description



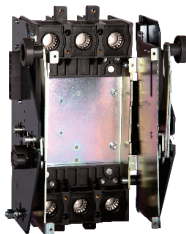
PISD 21-M8 T



9.20 DOB Draw-out base

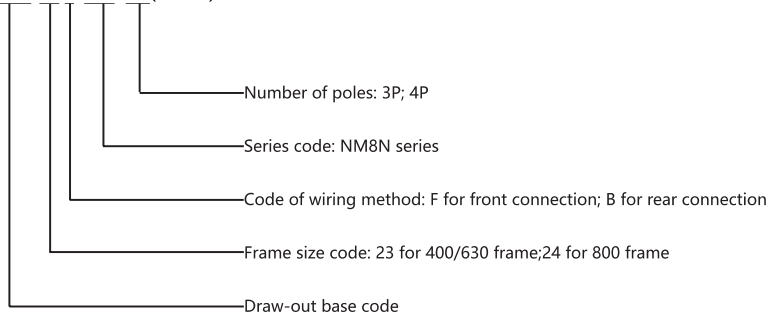
9.20.1 Function

- Quickly change the circuit breaker without changing the inlet and outlet wires and installing the base;
- Withdrawable base can be installed in advance to provide convenience for customers to add circuit breakers later;
- With plug-in safety device function (optional), it can ensure that the circuit breaker can automatically trip when it is pulled out when the circuit breaker is closed.



9.20.2 Model description

DOB 23F-M8 3P(400A)¹⁾



Note¹⁾: DOB23 is suitable for 400/630 housings. There are two specifications of 400 and 630.

9.21 DOSD Draw-out safety device

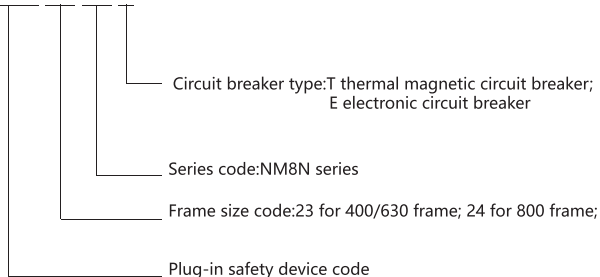
9.21.1 Function

Used together with the plug-in base, it can ensure that the circuit breaker can automatically trip when it is pulled out when the circuit breaker is closed.

9.21.2 Model description DOSD 23-M8 T



DOSD 23- M8 T



Note¹⁾: This accessory is pre-mounted with DOB, do not need to order.

9.22 DRA DIN-rail adapter

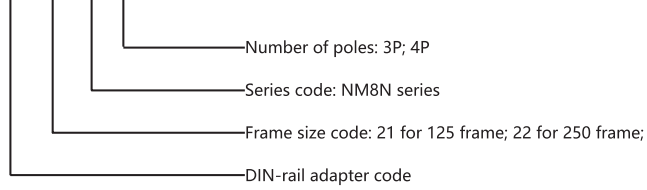
9.22.1 Function

Adapt to the body and can be mounted on a 35mm standard DIN rail



9.22.2 Model description

DRA 21-M8 3P



9.23 COMA communication module

9.23.1 Function

The COMA communication module is an interface module for the communication between the electronic plastic case circuit breaker and the bus system, and performs communication and relay control output. Combined with the Modbus-RTU communication protocol, this communication module can easily establish a connection with a fieldbus master device to achieve three remote or four remote functions.

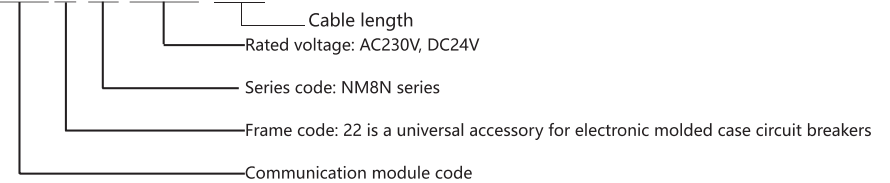


The technical parameters are as follows:

- Rated voltage: AC230V or DC24V (error range $\pm 15\%$)
- Communication type: RS485 (Modbus-RTU protocol)
- Contact capacity: AC250V / 3A; DC30V / 3A
- Transmission medium: shielded twisted pair
- Transmission distance: 1.2km (using category A shielded twisted pair)
- Working status indication: LED indication
- Number of stations: 1 station

9.23.2 Model description

COMA22-M8 DC24V 0.5m



9.23.3 Communication solution

Solutions	Achievable function	Required products and accessories	Note
Solution 1	Remote measure	NM8N basic or standard electronic molded case circuit breaker; COMA22-M8 communication module.	1. Read phase current
Solution 2	Remote measure Remote signal	NM8N basic or standard electronic moulded case circuit breaker; COMA22-M8 communication module; AX auxiliary contact (optional, indicating opening and closing status); AL alarm contact (optional, indicating trip status).	1. Read phase current 2. Indicate circuit breaker position information (open, closed, trip status)
Solution 3	Remote measure Remote signal Remote control	NM8N basic or standard electronic moulded case circuit breaker; COMA22-M8 communication module; AX auxiliary contact (optional, indicating opening and closing status); AL alarm contact (optional, indicating trip status); MOD electric operation mechanism.	1. Read phase current 2. Indicate circuit breaker position information (open, closed, trip status) 3. Control circuit breaker opening and closing
Solution 4	Remote measure Remote signal Remote control Remote adjustment	NM8N standard electronic molded case circuit breaker; COMA22-M8 communication module; AX auxiliary contact (optional, indicating opening and closing status); AL alarm contact (optional, indicating trip status); MOD electric operation mechanism.	1. Read phase current 2. Indicate circuit breaker position information (open, closed, trip status) 3. Control circuit breaker opening and closing 4. Adjust the internal parameter settings of the controller (only for standard specifications. For details, please refer to the communication protocol).



9.24 PSU battery box

9.24.1 Function

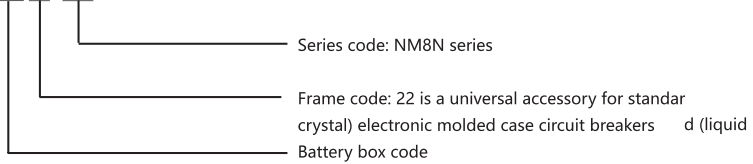
Provide DC 9V power for the standard (liquid crystal) controller for users to view, set and modify controller parameters.,when current under 0.4In.The batteries inside box are changeble.

Output voltage: DC 9V

Continuous power supply time: 7 hours

9.24.2 Model description

PSU22-M8



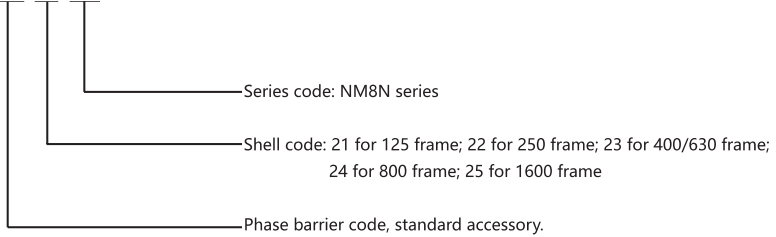
9.25 PHS Phase barrier

9.26.1 Function

Guarantees phase-to-phase insulation safety and prevents phase-to-phase short circuits

9.26.2 Model description

PHS 21-M8



9.26 Installation diagram of internal accessories

Accessory name	Mounting and wiring mode				
	NM8N-125, 250 NM8NL-125, 250	NM8N-400, 630 NM8NL-400, 630	NM8N-800	NM8N-1600	NM8N-1600 MOD
	3P, 4P	3P, 4P	3P, 4P	3P, 4P	3P, 4P
No accessory					
Alarm contact					
Auxiliary contact					
Shunt release					
Under-voltage release					
Shunt release Auxiliary contact					
Auxiliary contact Under-voltage release					
Shunt release Alarm contact					
Auxiliary contact Alarm contact					
Under-voltage release Alarm contact					
Shunt release Auxiliary contact, alarm					
Auxiliary contact alarm contact Under-voltage release					

■-Shunt release ▲-Under-voltage release ○-Auxiliary contact ●-Alarm contact

- Note:
- a. NM8N-125, 250, 400, 630, 800 cannot be equipped with undervoltage release and shunt release at the same time;
 - b. NM8N-125, 250 3P / 4P can be equipped with a maximum of 2 sets of auxiliary contacts; 1P has no internal accessories; 2P can be equipped with a maximum of one auxiliary / alarm contact at the same time;
 - c. NM8N-400, 630 can install up to 3 sets of auxiliary contacts;
 - d. NM8N-800 can be equipped with up to 4 auxiliary contacts;
 - e. NM8N-1600 MOD can be equipped with a maximum of 3 sets of auxiliary contacts, and can simultaneously install undervoltage release and shunt release;
 - f. NM8N series can only be equipped with one alarm contact.