NM1
Moulded Case Circuit Breaker

1. General

1.1 Certificates: KEMA, UKrSEPRO, EAC, RCC, EK;

1.2 Electric ratings: AC 690V,50/60HZ, 10~1250A;

1.3 Mounting mode: Vertical and horizontal;

1.4 Standard: IEC/EN60947-2.

2. Type designation

N M 1 - □□□/ □□□□

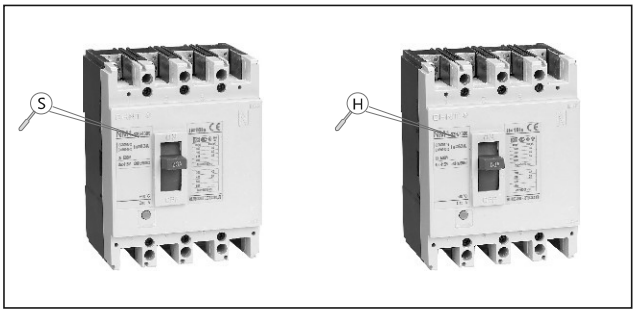
- Type of N-pole for 4-P breaker*
- Application: Blank: for power distribution; 2: for motor protection
- Release type and accessory code (please refer to table on page 94)
- Number of poles
- Operation mode: Blank: direct operation with handle; P: motor-driven operation; Z: Operation with rotary handle
- Code of Breaking capacity : C-basic type; S-standard type; H-higher type; R-current limiting type
- Frame size rated current
- Design sequence number
- MCCB code
- Company code

Note *: There is types of N-pole for 4P breaker
B: Without current release components, N-Pole makes with the other three poles(N-pole first makes then breaks);

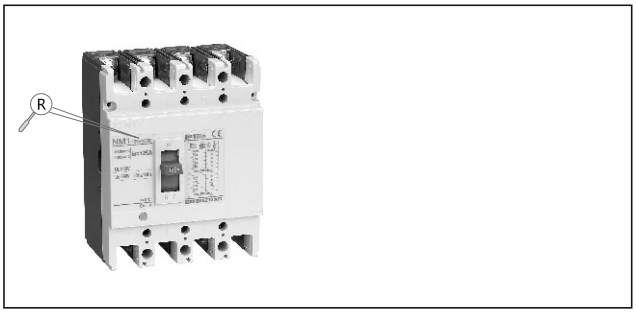
3. Classification

According to breaking capacity of breaker:

Standard type (C,S) Higher type (H)



Current-limiting type (R)



B

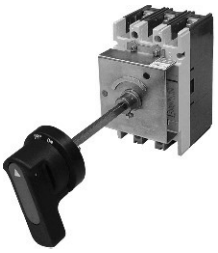
According to wiring mode:

Front connection

According to operation mode:

Direct operation with handle

Operation with rotary handle



Motor-driven operation

According to number of poles:

2P

3P

4P

4. Operating conditions

4.1 Temperature: -5℃~+40℃; the average value within 24h shall not exceed +35℃.(please refer to coefficients on P79 for temperature compensation correction); for the circuit breaker with thermo-magnetic release, +40℃ is set to be the standard temperature for ratings. For temperature not between -5℃~+40℃, please contact us for temperature compensation correction.

4.2 Altitude: not exceed 2000m (Please contact with us for reduction coefficient if altitude at the mounted site beyond 2000m).

4.3 Pollution grade: Grade 3

4.4 Air conditions

At mounting site, relative humidity not exceed 50% at the max temperature of +40℃, higher relative humidity is allowable under lower temperature. For example, RH could be 90% at +20℃, special measures should be taken to occurrence of dews.

5. Technical data

Frame size current		63			125						250										400				630				800					1250
Electric characteristics as per IEC 60947-2, EN 60947-2 Rated current (A) In 40°C Rated insulation voltage (V) Ui		10, 16, 20, 25, 30, 32, 40, 50, 63			25, 30, 32, 40, 50, 63, 80, 100, 125						100, 125, 140, 150, 160, 175, 180, 200, 225, 250										250, 300, 315, 350, 400				400, 450, 500, 630				630, 700, 800					800, 1000, 1250
		500			800						800										800				800				800					800
Rated impulse withstand voltage(kV) Uimp		6			8						8										8				8				8					8
Rated operational voltage (V) Ue AC 50/60Hz		415			690						690										690				690				690					690
Arcing distance (mm)		≤50			≤50						≤50										≤100				≤100				≤100					≤100
Breaking capacity code		S	H		C	S	H			R	C		S		H			R			S	H		R	S	H		R	S	H			R	H
																																		
Number of poles		3	3	4	3	3	2	3	4	3	2	3	4	1	3	4	2	3	4	3	3	4	3	3	3	4	3	3	3	4	3	4	3	3
Rated ultimate short-circuit breaking capacity Icu (kA, rms)	AC 220/230/240V	20	42	42	25	42	65	65	65	85	25	25	25	20	42	42	65	65	65	85	50	50	85	100	50	50	85	100	65	65	85	85	100	85
	AC 380/400/415V	15	35	35	20	25	50	50	50	65	20	20	20	10	25	25	50	50	50	65	35	35	50	70	35	35	50	70	50	50	60	60	70	65
Test sequence:O–t–CO	AC 660/690V	–	–	–	3	3	–	8	8	10	–	5	5	–	5	5	–	8	8	10	10	10	12	15	12	12	15	15	12	12	20	20	20	20
Rated service short-circuit breaking capacity Ics (%Icu) Test sequence:O–t–CO–t–CO		50%			50%																50%				50%				50%					50%
Isolation function		■			■						■										■				■				■					■
Utilization class		A			A						A										A				A				A					A
Front connection		■			■						■										■				■				■					■
Rear connection		■			■						■										■				■				■					
Plug in type		■			■						■										■				■				■					
Shunt release		■			■						■										■				■				■					■
Under-voltage release		■			■						■										■				■				■					■
Auxiliary contact		■			■						■										■				■				■					■
Alarm contact		■			■						■										■				■				■					

Note:
The symbols O–t–Co, O–t–Co–t–Co are used for defining the sequence of operations.
O: breaking operation; t: the time interval between two successive short-circuit operations;
CO: a making operation followed, after the appropriate opening time, by a breaking operation.

6. Release

Inverse time breaking action property of the over current releasing of the breaker (for power distribution) at the status that all poles are electrified simultaneously

No.	Test current	I/In	Conventional time	Initial status
1	Conventional non-trip current	1.05	2h(In > 63A), 1h(In≤63A)	Cold status
2	Conventional trip current	1.30	2h(In > 63A), 1h(In≤63A)	Right after test no. 1

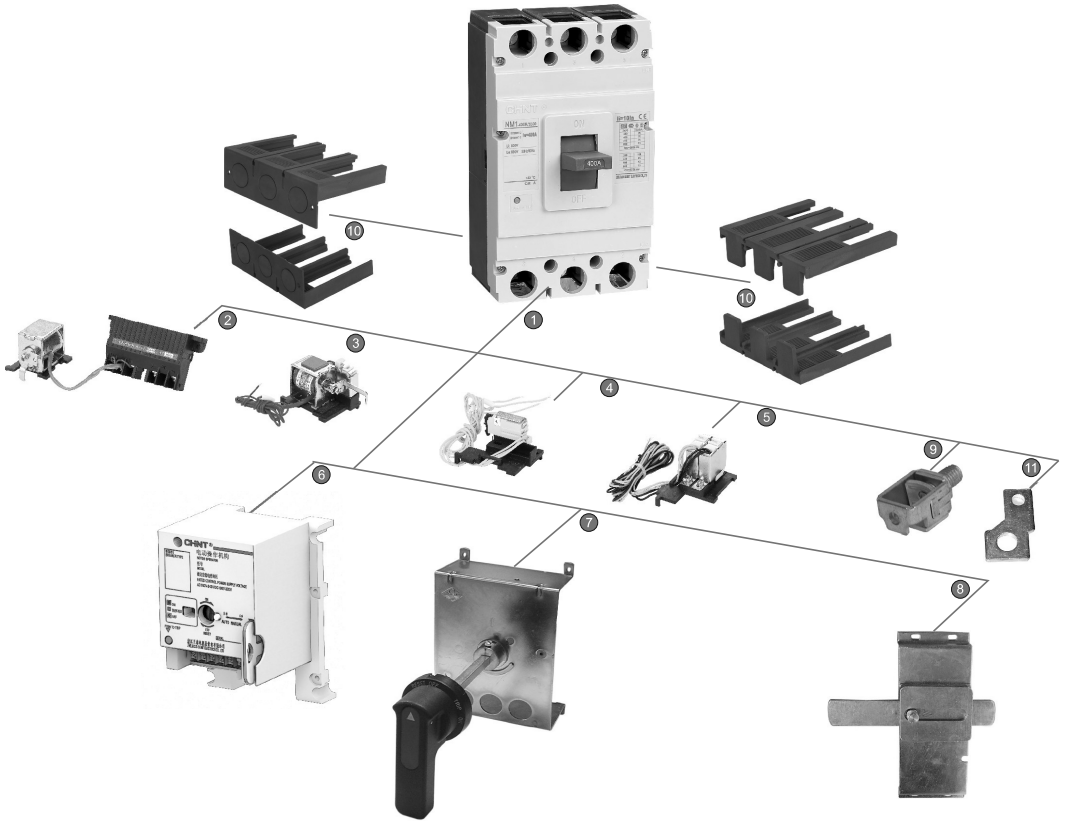
Inverse time-delay breaking operation property of the over current tripping of the breaker(for motor protection) at the status that all poles are electrified simultaneously(conforms to IEC60947-3)

Serial No.	Setting current	Conventional time	Start-up status	Remark
1	1.0In	> 2h	Cold status	
2	1.2In	≤2h	Right after test number 1	
3	1.5In	≤2min	Hot state	10A≤In≤25A
				25A≤In≤63A
		≤4min	Hot state	63A≤In≤125A
		≤8min	Hot state	125A≤In≤800A
4	7.2In	0.5s≤Tp≤5s	Cold state	10A≤In≤25A
		2s≤Tp≤10s	Cold state	25A≤In≤63A
		4s≤Tp≤10s	Cold state	63A≤In≤125A
		6s≤Tp≤20s	Cold state	125A≤In≤800A

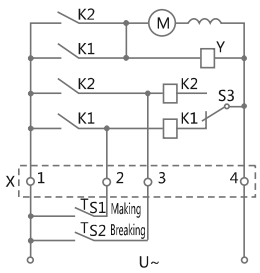
7. Product overview

NM1 Moulded Case Circuit Breaker

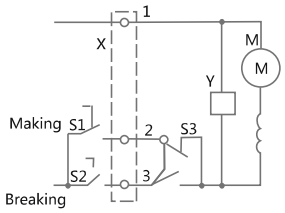
1. MCCB (fixed type)
2. Under-voltage release
3. Shunt release
4. Alarm contact
5. Auxiliary contact
6. Motor-driven operation mechanism
7. Extended manual operation handle
8. Mechanical interlock
9. Cage clamp terminal
10. Terminal cover
11. Front connection plate



Making and breaking diagram of
motor-driven operation mechanism(AC/DC)



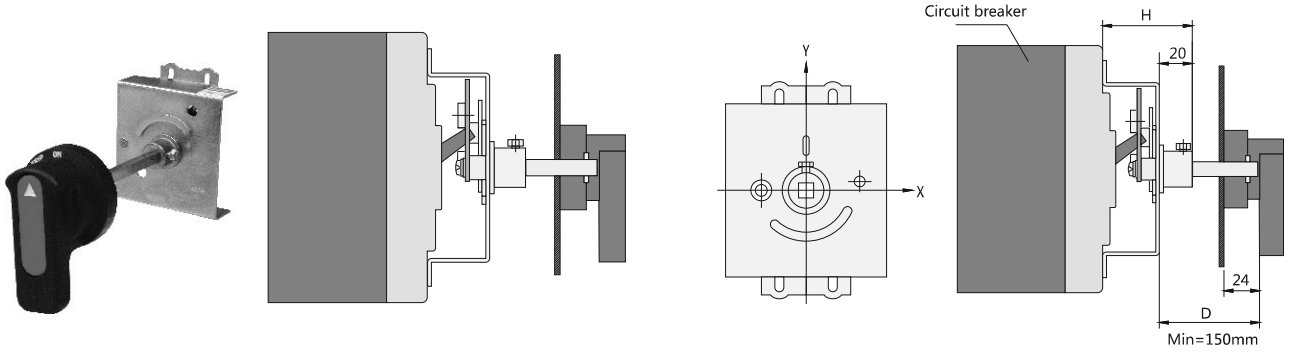
With self-locking relay
Specification AC 50Hz 230V or 400V



Without self-locking relay
Specification AC 50Hz 230V or 400V

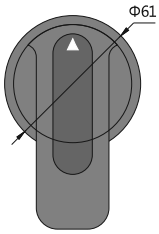
Rotary manual operation mechanism

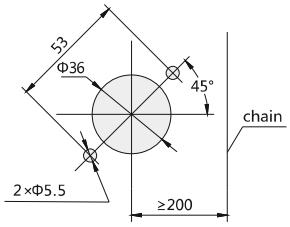
Making/breaking wiring diagram of manual operation mechanism



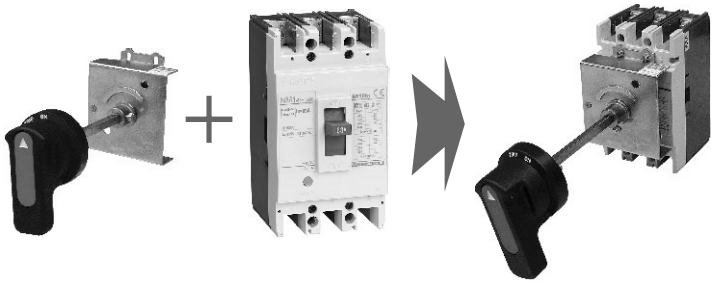
B

Mounting dimensions of manual operation mechanism





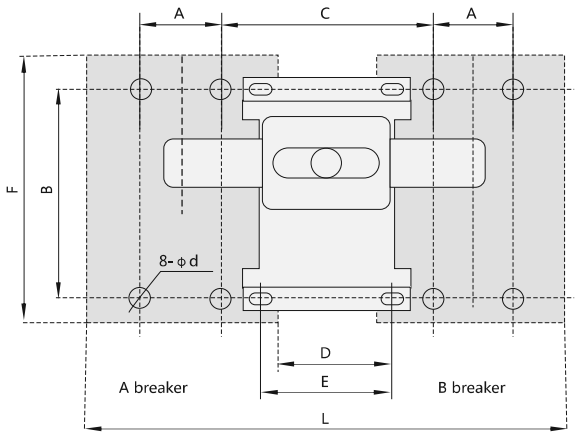
Boring diagram of handle mounting

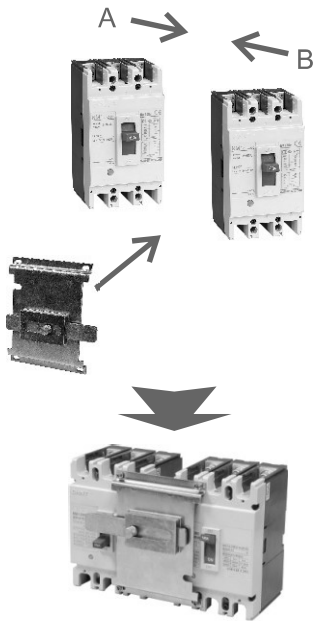


(mm)

Model	NM1-63	NM1-125	NM1-250	NM1-400	NM1-630	NM1-800H NM1-800R	NM1-1250S NM1-1250H
Mounting size H	51	51	54	88	89	96	83
Y value of the handle related to the center of the breaker	0	0	0	0	0	0	0

Mounting and boring dimensions





(mm)

Model	A	B	C	D	E	F	L	Φd
NM1-63	25	117	80	30	80	135	182	4.5
NM1-125	30	130.5	90	30	90	155	210	4.5×6*
NM1-250	35	126	100	30	100	165	240	5.5
NM1-400	44	194	136	30	40	257	330	7
NM1-630	58	200	172	48	62	270	412	7
NM1-800	70	243	167	28	40	280	448	7

Note:

1. * stands for length of boring.
2. Install the breaker on the frame first, then install the mechanical interlock on the breaker.