NM1
Moulded Case Circuit Breaker

1. General

1.1 Certificates: KEMA, ESC, UKrSEPRO, GOST, RCC, KC;
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 — □ □ □ / □ □ □ □

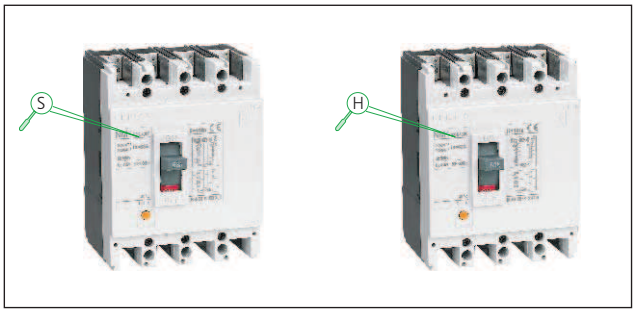
- Company code
- MCCB code
- Design sequence number
- Frame size rated current
- Code of Breaking capacity :
  S-standard type;
  H-higher type;
  R-current limiting type
- Operation mode: Blank: direct operation with handle;
  P: motor-driven operation;
  Z: Operation with rotary handle
- Number of poles
- Release type and accessory code (please refer to table on page 86)
- Application: Blank: for power distribution;
  2: for motor protection
- Type of N-pole for 4-P breaker*

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 (S) Higher type (H)



Current-limiting type (R)

According to wiring mode:

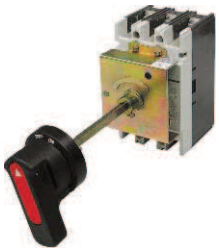
Front connection

Rear conection

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 P107 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.

8. Curves (for power distribution, calibrated at 40℃)

8.1 The characteristic curve of anti-time limit and the correcting curve of temperature see fig.

Fig.1 NM1-63(10~32), NM1-125(25~32)
Characteristic Curve

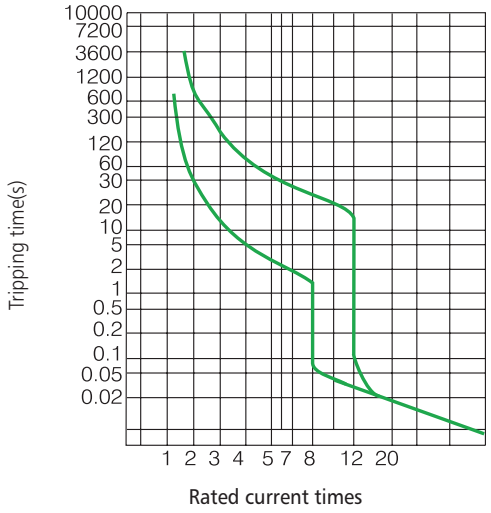


Fig.2 NM1-63(10~32), NM1-125(25~32)
Adjustment curve of temperature

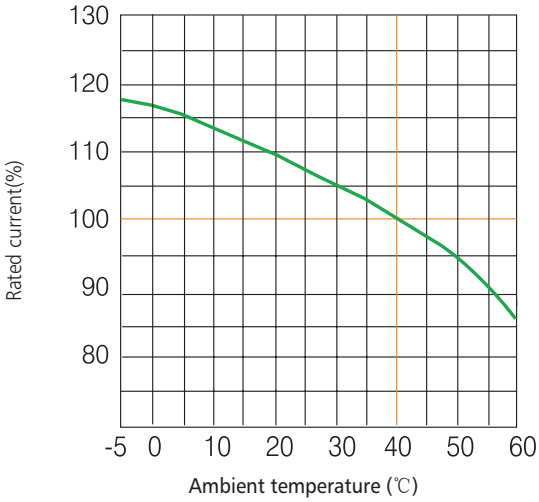


Fig.3 NM1-63(40~63), NM1-125(40~125)
Characteristic Curve

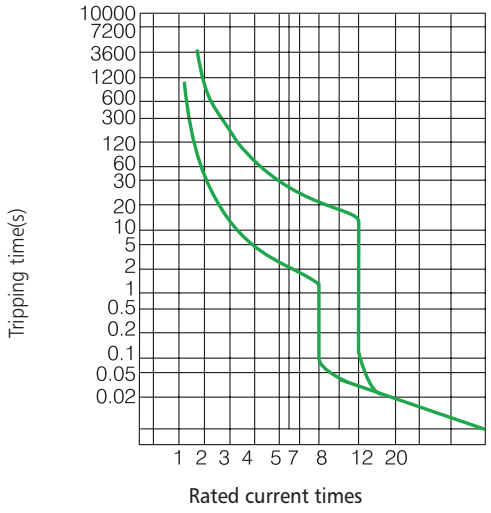
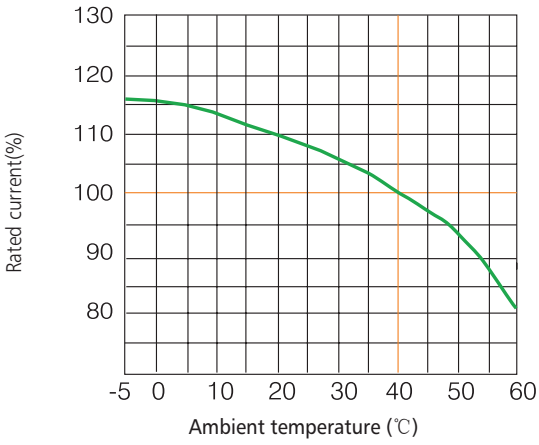


Fig.4 NM1-63(40~63), NM1-125(40~125)
Adjustment curve of temperature



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℃	10, 16, 20, 25, 30, 32, 40, 50, 60, 63			25, 30, 32, 40, 50, 60, 63, 75, 80, 100, 125					100, 125, 140, 150, 160, 175, 180, 200, 225, 250							225, 250, 300, 315, 350, 400			400, 450, 500, 630			630, 700, 800			700, 800, 900, 1000, 1250
Rated insulation voltage (V) Ui	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	S	H		R				S	H	R	S	H	R	H	R		H
																									
Number of poles	3	3	4	3	3	2	3	4	3	1	3	2	3	4	2	3	3	4	3	3	3	4	3	3	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	20	42	65	65	65	85	85	50	50	85	100	50	50	85	100	85	85	100	85
AC 380/400/415V	15	35	35	20	25	50	50	50	65	–	25	50	50	50	65	65	35	35	50	70	35	35	50	70	60	60	70	65
AC 660/690V	–	–	–	3	3	–	8	8	10	–	5	–	8	8	–	10	10	10	12	15	12	12	15	15	20	20	20	20
Test sequence:O-t-CO																												
Rated service short-circuit breaking capacity Ics (%Icu) Test sequence:O-t-CO-t-CO	50%			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	≤4min	Cold status	10≤In≤250
		≤8min	Cold status	250≤In≤630
4	7.2In	4s≤t≤10s	Cold status	10≤In≤250
		6s≤t≤20s	Cold status	250≤In≤630

7. Product overview

NM1 Moulded Case Circuit Breaker

1. MCCB (fixed type)
2. Rear connection
3. Under-voltage release
4. Shunt release
5. Alarm contact
6. Auxiliary contact
7. Motor-driven operation mechanism
8. Extended manual operation handle
9. Mechanical interlock
10. Cage clamp terminal (Refer to P102)
11. Terminal cover
12. Front connection plate

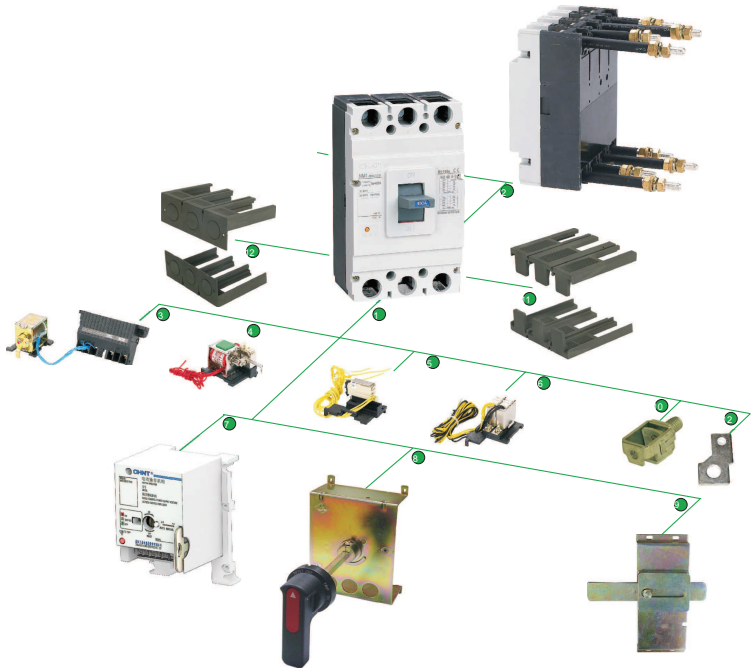


Fig.5 NM1-250 Characteristic Curve

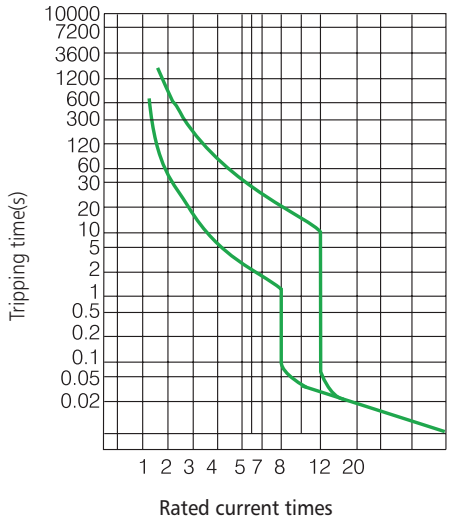


Fig.6 NM1-250 Adjustment curve of temperature

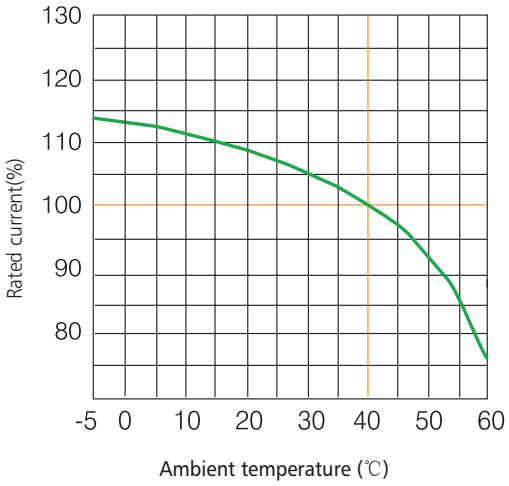


Fig.7 NM1-400 Characteristic Curve

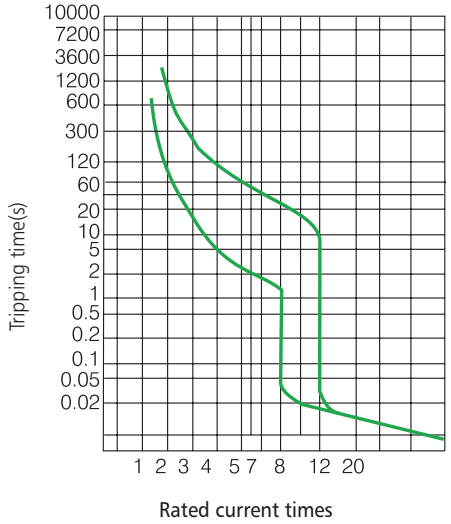


Fig.8 NM1-400 Adjustment curve of temperature