Product Specifications

Product name: Molded Case Circuit Breaker (MCCB)

Product model: NDM3-250 series

Date: 20150925

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Nader 良信电器	Document name	Product Specifications	Document No.	NDT2930078
	Product model and name	NDM3-250 series Molded Case Circuit Breakers	Version	1
			Implement ation date	20160510

Revision History

Version	Revision Content	Revision Date	Revised By
0	New addition	20150925	Sun Conglin
1	1. Change the appearance picture and newly add the screw tightening torque 2. Mounting distance of molded case circuit breakers is added	20160509	Sun Conglin

Document No.	NDT2930078	Version	1	Implementation date	20160510

1. Applicable Scope and Purpose

NDM3 series of molded case products apply to infrequent switching of circuits with the AC 50Hz (or 60Hz), the rated working voltage of 690V and rated working current of 800A as well as infrequent motor starting. With the overload, short circuit and undervoltage protection functions, the circuit breaker can protect lines and power equipment from damage.

2. Picture of the Product (The picture is for reference only; the specific kind prevail)

(a) Normal product

(b) Dedicated products in the power sector

3. Specification and Model Description

ND M 3 -250 □ □ / □ □ □□ □ □ □ (□ □) □

- Product type (Note 8)
- Remark on detailed accessory specifications (Note 7)
- Remark on detailed accessory specifications (Note 6)
- Rated current
- Neutral pole-N-pole type of the 4P product (Note 5)
- Application code (Note 4)
- Accessory code (see Table 1)
- Release code(Note 3)
- Number of poles: 3P, 4P
- Operation mode (Note 2)
- ~~Rated limit~~ short-circuit breaking capacity of 3P products (Note 1)
- Design SN
- Molded case circuit breaker (MCCB)
- Nader brand low-voltage apparatus

Note 1: Rated limit short-circuit breaking capacity of 3P products:

L: Standard type, M: Relatively high breaking type, H: High breaking type;

Note 2: Operation mode:

No code is available for the direct handle-operated mode

P: Motor-operated

Z: Rotation handle;

Note 3: Release code:

0: Tripper (none)

2: Instantaneous tripper only

3: Complex tripper;

Note 4: Application code

No code is available for the circuit breaker for distribution

2: Protection motor type;

Note 5: The neutral pole-N-pole type of the 4P product is divided into three types:

Type A: The N-pole isn't installed with an overcurrent tripper, but always connected;

Type B: The N-pole isn't installed with an overcurrent tripper, but on-off with the other three poles;

Type C: The N-pole is installed with an overcurrent tripper, and on-off with the other three poles.

Note 6: Remark on detailed accessory specifications

1. Detailed description of connection-type or rotation handle:

① Normal products are uncoded;

② P: Extended connection busbar;

③ JK: Only the inlet wire end adopts the connection frame while the outlet wire end adopts the front-plate connection mode as the wiring mode;

④ CK: Only the outlet wire end adopts the connection frame while the inlet wire end adopts the front-plate connection mode as the wiring mode;

⑤ K: Inlet and outlet wire ends adopt the connection frame as the wiring mode;

⑥ H: Rear-plate connection

⑦ Z1: Plug-in rear-plate connection

⑧ Z2: Plug-in front-plate connection

For example: NDM3-250M/3300 250A (plug-in rear-plate connection),

NDM3-250LZ/3321 125A(CS1-A),

NDM3-250M/33002 200A (connection busbar), etc.

Note 7: Indicate the accessory voltage; the voltage of the electric operating mechanism, undervoltage tripper and shunt tripper shall be indicated temporarily:

① The voltage of the electric operating mechanism is represented as CD2 space+voltage: For example NDM3-250LP/3020 250A (CD2 DC24V),

② If only the voltage exists in the (), the voltage of the shunt tripper or undervoltage tripper from the accessories is indicated in default,

For example: NDM3-250L/3341 200A (AC220V)

③ If the shunt tripper or undervoltage tripper exists simultaneously with the different voltage, it shall be clearly marked in front of the voltage,

For example: NDM3-250M/3350 125A(MX AC220V+Q AC380V),

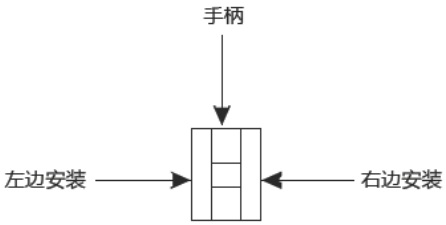
MX and Q represent the shunt tripper and undervoltage tripper respectively.

Note 8: Product type

Normal products are uncoded

DL: Dedicated products in the power sector

Table 1: Comparison Table of Accessory Code:



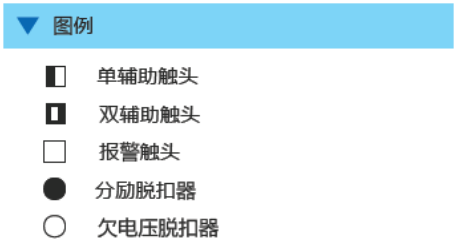


Table 1

安装位置 / 型号 / 极数 / 附件代号	附件名称	NDM3-100 NDM3-125		NDM3-250		NDM3-400		NDM3-630		NDM3-800	
		3	4	3	4	3	4	3	4	3	4
00	无	—		—		—		—		—	
10	分励脱扣器										
20	双辅助触头										
21	单辅助触头										
30	欠电压脱扣器										
40	分励脱扣器 双辅助触头										
41	分励脱扣器 单辅助触头										
50	分励脱扣器 欠电压脱扣器										
60	二组双辅助触头										
61	二组单辅助触头										
62	双辅助触头 单辅助触头										
70	欠电压脱扣器 双辅助触头										
71	欠电压脱扣器 单辅助触头										
08	报警触头										
18	分励脱扣器 报警触头										
28	双辅助触头 报警触头										
38	欠电压脱扣器 报警触头									—	
48	分励脱扣器 单辅助+报警触头										
58	单辅助+报警触头										
68	双辅助触头 单辅助+报警触头										
78	欠电压脱扣器 单辅助+报警触头									—	

4. Main Technical Parameters

Model		NDM3-250							
Rated current of housing Inm (A)		250							
Rated current In (A)		100, 125, 140, 160, 180, 200, 225, 250							
Rated insulation voltage Ui (AC V)		1000							
Rated impulse withstand voltage Uimp (V)		8000							
Rated working voltage Ue (AC V)		380/400/415				500		660/690	
Number of poles		3	3	4	3	3	4	3	4
Rated limit short-circuit breaking capacity level		L	M		H	M		M	
Rated limit short-circuit breaking capacity Icu (KA)		40	70	70	100	40		20	
Rated operating short-circuit breaking capacity Ics (KA)		30	50	50	70	40		10	
Operating performance	POWER ON	8000							
	Without electricity	20,000							

5. Derating Parameter Table of Temperature for the Circuit Breaker

	降容系数 (In)						
	+40℃	+45℃	+50℃	+55℃	+60℃	+65℃	+70℃
NDM3-100	1	0.977	0.954	0.931	0.907	0.883	0.858
NDM3-125	1	0.977	0.954	0.931	0.907	0.883	0.858
NDM3-250	1	0.982	0.963	0.944	0.924	0.904	0.882
NDM3-400	1	0.981	0.962	0.942	0.922	0.901	0.879
NDM3-630	1	0.979	0.958	0.937	0.915	0.893	0.871
NDM3-800	1	0.980	0.960	0.939	0.918	0.897	0.877

> 注：以上降容系数均在通以壳架额定电流下测得

6 High-altitude derating factor

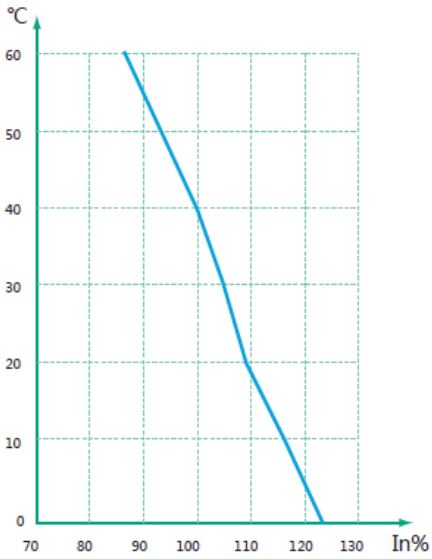
Altitude (km)	Rated operating current	Maximum operating voltage	Rated power frequency withstand voltage
2	In	Ue	U
2.5	In	Ue	U
3	0.980In	0.870Ue	0.909U
3.5	0.972In	0.846Ue	0.858U
4	0.963In	0.813Ue	0.820U
4.5	0.951In	0.781Ue	0.784U
5	0.938In	0.743Ue	0.752U

7. Normal Working Environment

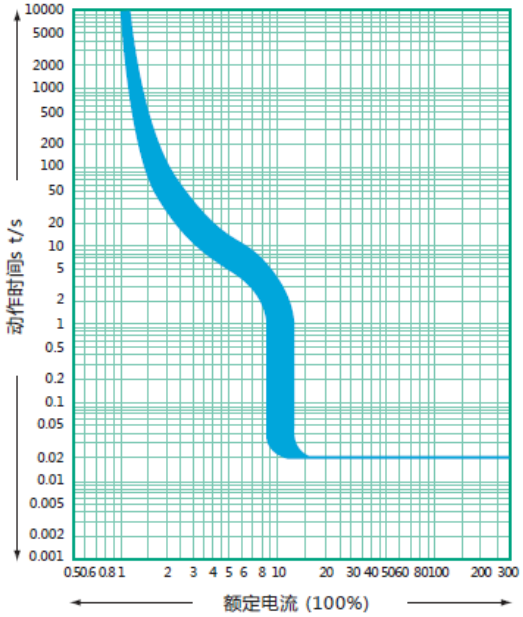
- ▲ Altitude: ≤2000m.
- ▲ Ambient temperature: -35℃~+70℃. (Reduced capacity is not considered with the temperature below +40℃)
- ▲ The relative humidity at an ambient temperature of +40℃ should not exceed 50%. A higher relative humidity is allowed at a lower temperature.
- ▲ Pollution level: 3.
- ▲ The product can withstand the effects of wet air, salt mist, oil mist and mould.
- ▲ The product should be installed free from snow and rain.
- ▲ The product can be disposed in places that are free from explosive media, media corrosive to metal, insulation damaging gas, and conductive dust.
- ▲ In case of stricter user conditions than the above description, negotiate with the manufacturer.

8. Characteristic Curve of Circuit Breaker

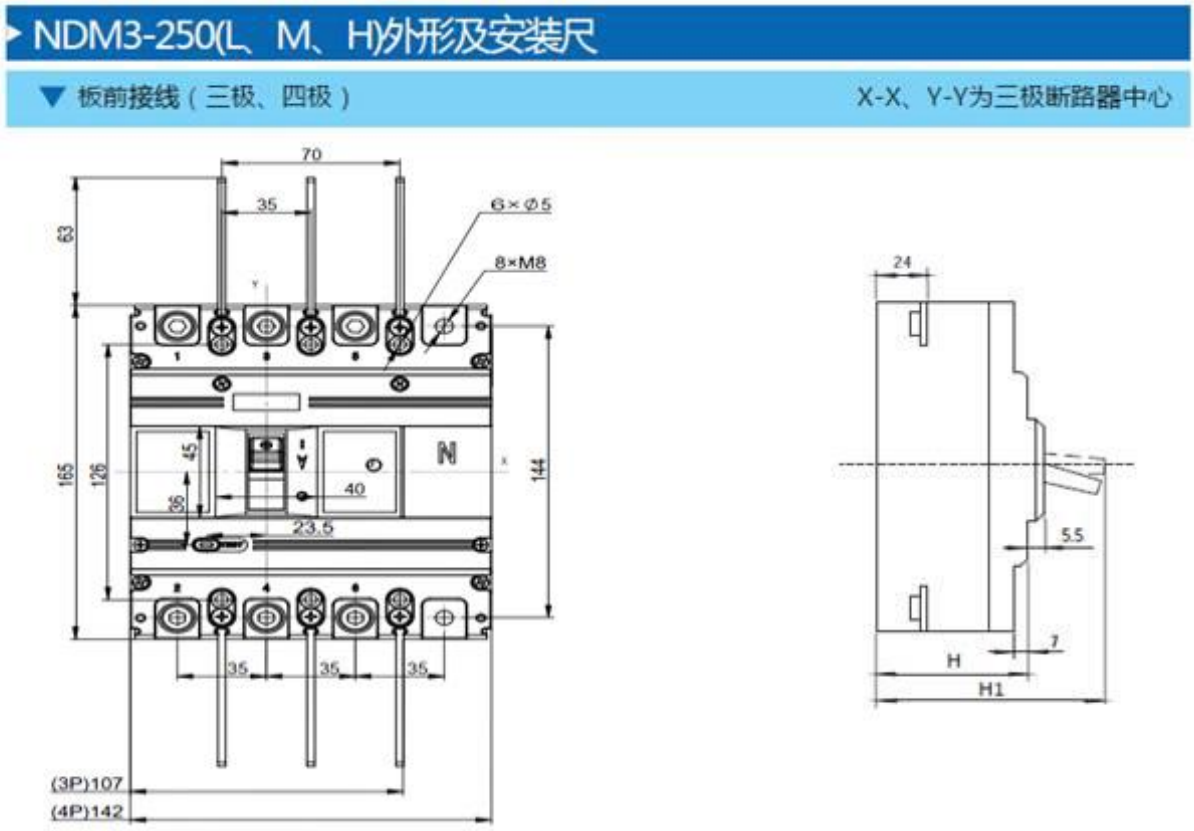
NDM3-250 电流 - 温度特性

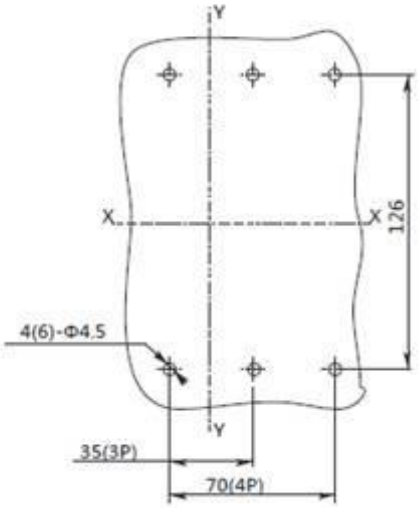


NDM3-250C/L/M/H 时间/电流特性曲线



9. Outline and Mounting Hole Dimensions





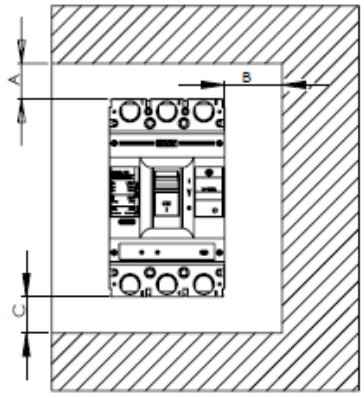
型号	H	H1
NDM3-250L	88.5	122.5
NDM3-250M/H	105.5	139.5
NDM3-250 4P		

Note: The limit deviation not indicated with the tolerance dimensions is as per GB/T 1804-m.

10. Installation Mode

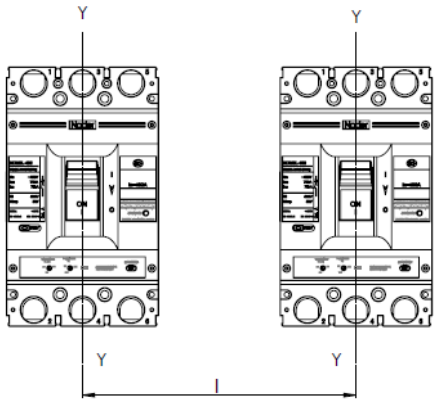
Installation mode: To be installed horizontally or vertically.

1) Insulation distance mounted in the metal cabinet (mm)



Mounting distance	A (inlet wire end to the cabinet face)		B (distance from side to cabinet)	C (outlet wire end to the cabinet face)
Specification	With a 0 arcing cover	Without a 0 arcing cover		
NDM3-250	25	65	30	30

2) Minimum center distance between rowed circuit breakers (mm)

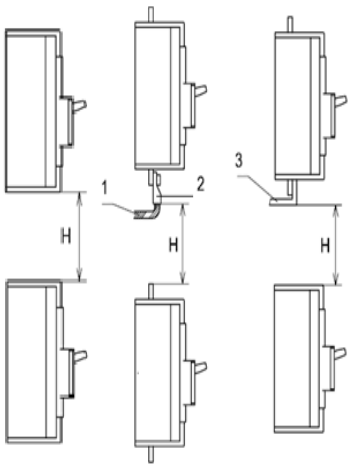


Specification	Width of circuit breaker		I Center distance	
	3P	4P	3P	4P
NDM3-250	107	142	137	172

Note: Check the connected busbar or cable during rowing or stacking of the circuit breaker to ensure that the air insulation distance won't be reduced.

3) Minimum center distance between stacked circuit breakers (mm)

Specification	H (distance of circuit breaker from bottom)	
	With a 0 arcing cover	Without a 0 arcing cover
NDM3-250	90	93



Note: 1 Bare cable connection

2 Cable insulating connection

3 Connection without insulation

Requirements: Check whether the 0 arcing cover or phase partition is assembled properly before products are energized

11. Packaging and Storage

Minimum packaging quantity: 1 piece/box. The packaged products should be stored in a warehouse with the ambient temperature of -40℃~75℃ and the corresponding relative humidity below 80% without acidic, alkali or other corrosive gas in the surrounding air. Under the conditions above, the storage period shall be no more than 36 months since the manufacturing date.

12. Precautions

▲ Various characteristics and accessories of the circuit breaker are set in the factory, which shall not be adjusted randomly;

▲ The circuit breaker handle can be located in three positions, indicating three states: on, off and free tripping. When the handle is in the free tripping position, pull the handle in the off direction when the circuit breaker is connected and on.

▲ Make sure to add a phase partition for product use.

▲ Tighten the accessory kit mounting screw M4 with a torque of 1.2-1.8Nm; when the terminal screw adopts the M8 hexagon screw, tighten it with a torque of 12Nm.