

# Product Specifications

Product name: Molded Case Circuit Breaker (MCCB)

Product model: NDM3-125

Date: 20150714

Prepared by	Reviewed by	Approved by
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<b>Nader</b>   良信电器	Document name	Product Specifications	Document No.	NDT500666
	Product model and name	NDM3-12 Molded Case Circuit Breaker	Version	1
			Implementation date	20150714

Revision History

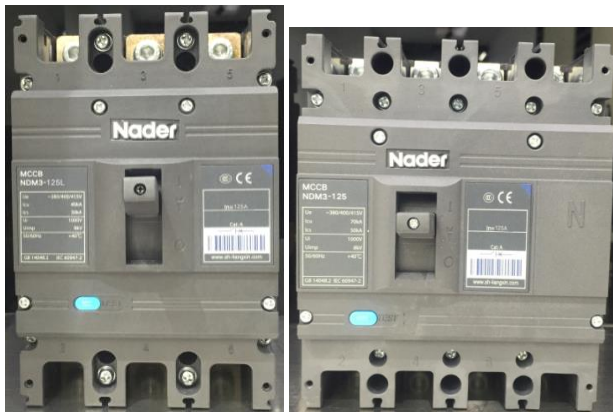
Version	Revision Content	Revision Date	Revised By
0	New addition	20150306	Bai Huiwen
1	Separation of power and general specifications	20150714	Bai Huiwen

Document No.	NDT500666	Version	1	Implementation date	20150714
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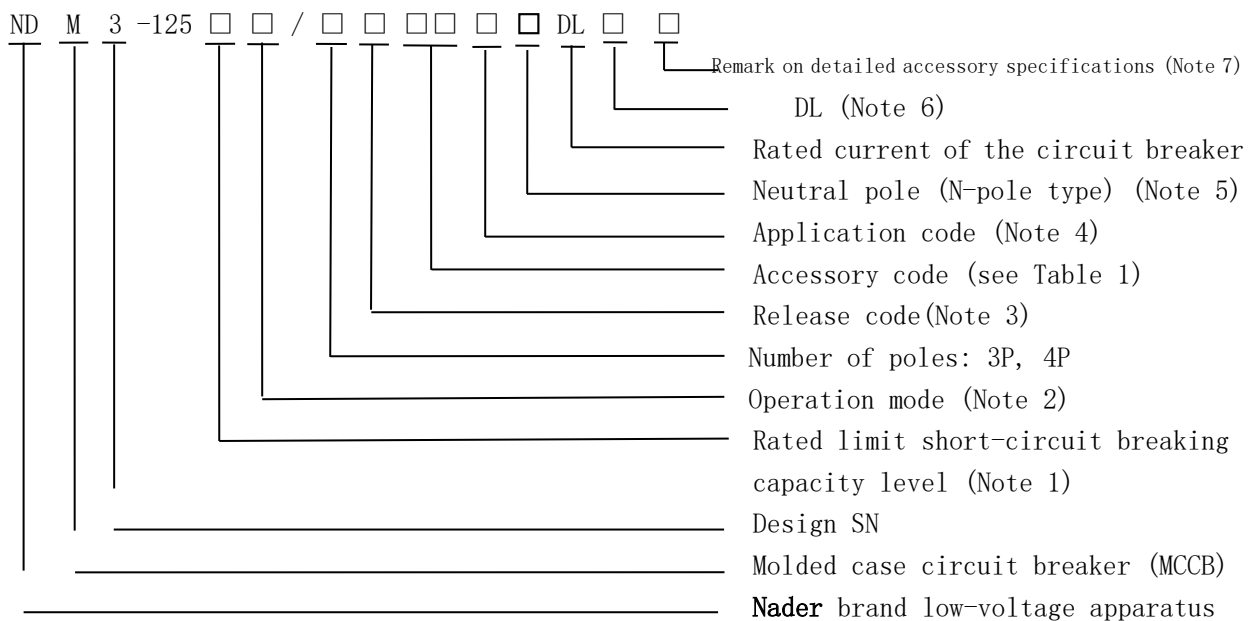
### 1. Application Scope and Purpose

NDM3 series of molded case products apply to infrequent switching of circuits with the AC 50/60Hz, the rated working voltage of 690V and rated working current of 125A 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



### 3. Specification and Model Description



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;

Document No.	NDT500666	Version	1	Implementation date	20150714
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Note 4: Application code

No code is available for the circuit breaker for distribution

2: Protection motor type;

Note 5: 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: DL: Dedicated for Electric Power;

For all power products, a label marked with "Dedicated for Electric Power" shall be affixed on the front face of the products.

Note 7: 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: NDM3-125M/3300 125A (plug-in rear-plate connection);

NDM3-125LZ/3321 125A (CS1-A);

NDM3-125M/33002 125A (connection busbar), etc.

2. 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:

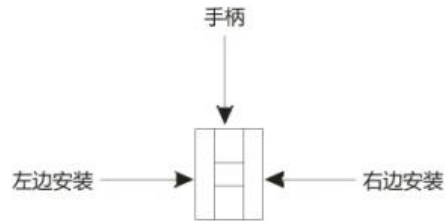
For example NDM3-125LP/3020 125A (CD2 DC24V),

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: NDM3-125L/3341 125A (AC220V)

Document No.	NDT500666	Version	1	Implementation date	20150714
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Table 1: Comparison Table of Accessory Code:



图例

- 单辅助触头
- 双辅助触头
- 报警触头
- 分励脱扣器
- 欠电压脱扣器

附件代号	附件名称	型号		NDM3-125		NDM3-250		NDM3-400		NDM3-630		NDM3-800	
		极数	安装位置	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			○□□	○□□	○□□	○□□	○□□	○□□	○□□	○□□	○□□	—

Document No.	NDT500666	Version	1	Implementation date	20150714
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#### 4. Main Technical Parameters

4.1	Model		NDM3-125				
	Rated current of housing $I_{nm}$ (A)		125				
	Rated current $I_n$ (A)		16, 20, 25, 32, 40, 50, 63, 80, 100, 125				
	Rated insulation voltage $U_i$ (AC V)		1000				
	Rated impulse withstand voltage $U_{imp}$ (V)		8000				
	Rated working voltage $U_e$ (AC V)		AC380/400/415V, AC500V, AC660/690V				
	Number of poles		3		4		
	Rated limit short-circuit breaking capacity level		L	M	H	/	
	Rated limit short-circuit breaking capacity $I_{cu}$ (KA)		415V	40	70	100	70
			500V		40		40
			690V		20		20
	Rated operating short-circuit breaking capacity $I_{cs}$ (KA)		415V	30	50	70	50
			500V		40		40
			690V		10		10
Operating performance		POWER ON	8000				
		Without electricity	20,000				

Connection capacity:

Rated current A	16, 20	25	32	40, 50	63	80	100	125
Wire cross-section area $mm^2$	2.5	4	6	10	16	25	35	50

#### 4.2 Tightening torque value of terminal/mounting screw

SN	Rated current of frame	Thread diameter	Torque value
1	NDM3-125	M8	12
		M4	2.4

Document No.	NDT500666	Version	1	Implementation date	20150714
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#### 4.3 Derating factor table of the circuit breaker

SN	Housing	Derating Factor Table of Product Temperature							
		Temperature	40°C	45°C	50°C	55°C	60°C	65°C	70°C
1	125	Derating factor	1	0.977	0.954	0.931	0.907	0.883	0.858

Note: 1). When the operating ambient temperature is below +40°C, the product can be used normally without derating capacity.

2). The above derating factors are measured at the frame current.

#### 4.4 High-altitude derating factor

High-altitude Derating Factor Table of Molded Case Circuit Breaker

Altitude (km)	Rated operating current	Maximum operating voltage	Rated power frequency withstand voltage
2	$I_n$	$U_e$	$U$
2.5	$I_n$	$U_e$	$U$
3	$0.980I_n$	$0.87U_e$	$0.909U$
3.5	$0.972I_n$	$0.846U_e$	$0.858U$
4	$0.963I_n$	$0.813U_e$	$0.820U$
4.5	$0.951I_n$	$0.781U_e$	$0.784U$
5	$0.938I_n$	$0.743U_e$	$0.752U$

### 7. Normal Working Environment

- 1) Altitude  $\leq 2000$  m;
- 2) Ambient temperature:  $-35^\circ\text{C} \sim +70^\circ\text{C}$ ; the average within 24h shall not be more than  $+35^\circ\text{C}$ . If the ambient temperature is higher than  $+40^\circ\text{C}$ , the user needs to reduce the capacity. See "Derating Factor Table of Product Temperature Change" for the derating factory;
- 3) The relative humidity at an ambient temperature of  $+40^\circ\text{C}$  should not exceed 50%. A higher relative humidity is allowed at a lower temperature. For example, the relative humidity at  $20^\circ\text{C}$  can reach 90%
- 4) For frost due to temperature change, the corresponding measures should be taken
- 5) The product can withstand the effects of wet air, salt mist and oil mist.
- 6) The installation category of the circuit breaker connected/not connected to the main loop is III and II respectively
- 7) The pollution level is Level 3
- 8) The maximum gradient is  $22.5^\circ$ .
- 9) The product can be disposed in places that are free from explosive media, media corrosive to metal, insulation damaging gas, and conductive dust

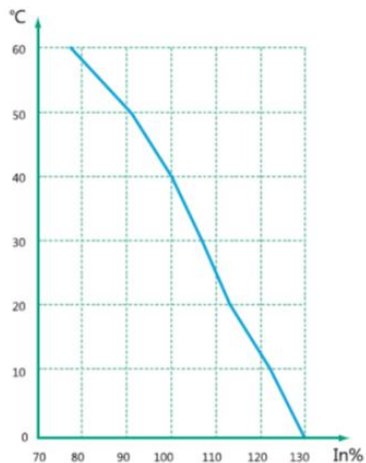
Document No.	NDT500666	Version	1	Implementation date	20150714
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10) The product should be installed free from snow and rain

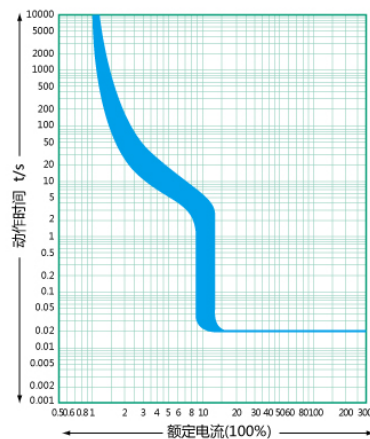
11) In case of stricter user conditions than the above description, negotiate with the manufacturer

### 8. Characteristic Curve of Circuit Breaker

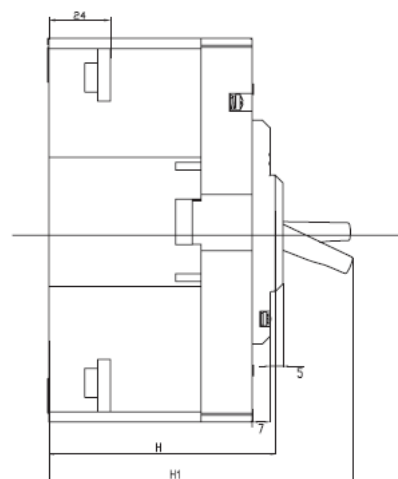
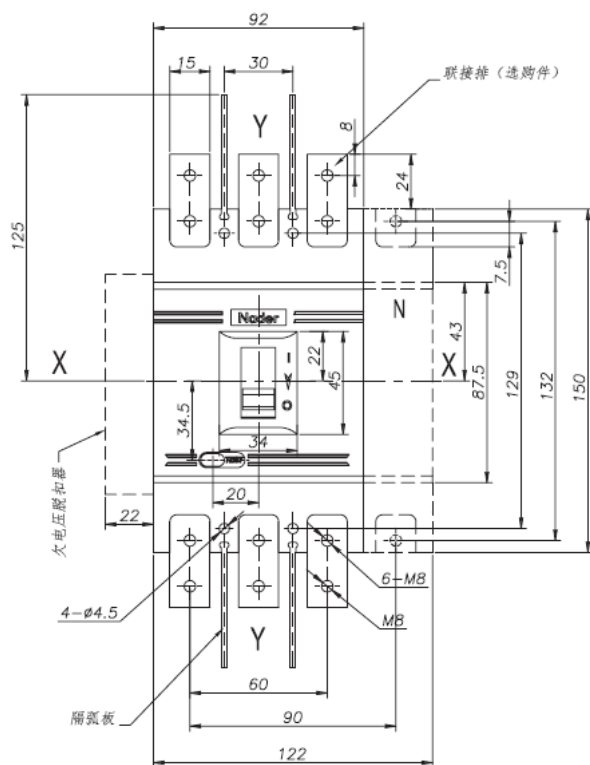
NDM3-125 Current-Temperature Characteristics



NDM3-125 Time/Current Characteristic Curve

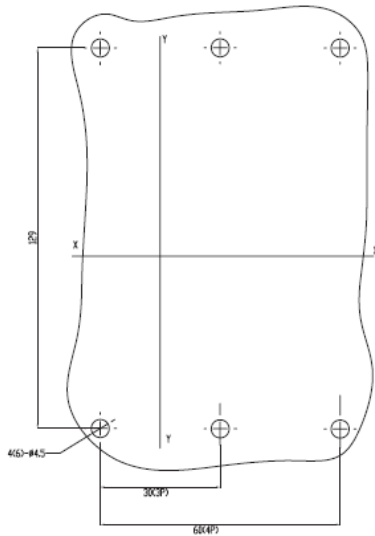


### 9. Outline and Mounting Hole Dimensions





Document No.	NDT500666	Version	1	Implementation date	20150714
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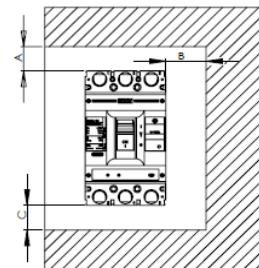
型号	H	H1
NDM3-125L	68	100
NDM3-125M/H	86	118
NDM3-125 四极		

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

### 9.1 Mounting distance (mm)

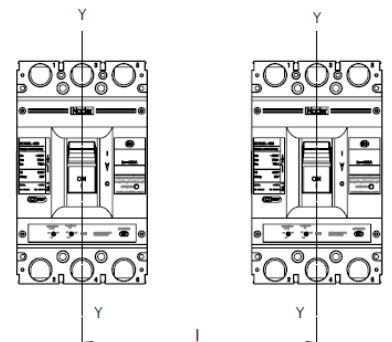
1) Insulation distance mounted in the metal cabinet (unit: mm), as shown below:

Mounting distance	A (inlet wire end to the cabinet face)		B (distance from side to cabinet)	C (outlet wire end to the cabinet face)
	With a 0 arcing cover	Without a 0 arcing cover		
NDM3-125	25	65	30	30



2) Minimum center distance between rowed circuit breakers:

Specification	Width of circuit breaker (mm)		Center distance (mm)	
	3P	4P	3P	4P
NDM3-125	92	122	122	152

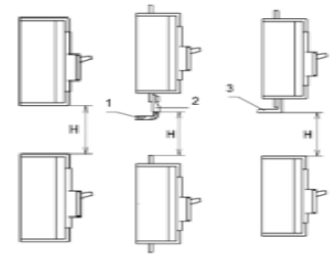


**Note:** Check the connected busbar or cable during rowing or stacking to ensure that the air insulation distance won't be reduced.

Document No.	NDT500666	Version	1	Implementation date	20150714
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3) Minimum center distance between stacked circuit breakers

Specification	H (distance of circuit breaker from bottom)	
	With a 0 arcing cover	Without a 0 arcing cover
NDM3-125	90	91

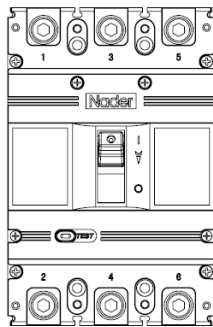


- Note: 1. Bare cable connection  
 2. Cable insulating connection  
 3. Connection without insulation  
 4. Check whether the 0 arcing cover or phase partition is assembled properly before products are energized.

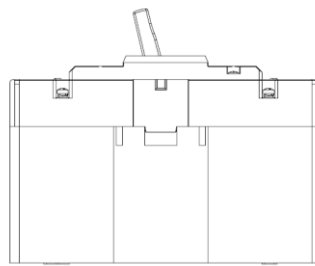
**10. Installation Mode**

For vertical installation of the product, the gradient between the installation surface and the vertical plane is no more than  $\pm 22.5^\circ$ .

Horizontal installation of the product.



Vertical Installation



Horizontal Installation

**11. Packaging and Storage**

Minimum packaging quantity: 1 piece/box. The packaged products should be stored in a warehouse with the ambient temperature of  $-40^\circ\text{C}\sim 75^\circ\text{C}$  and 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. List of Accessories and Installation**

SN	Name	Specification	Quantity/Set
1	Cross small pan-head screws	M4X45	4
2	Plain washer	4	4
3	Spring washer	4	4
4	Hexagon nut(s)	M4	4
5	Partition	—	4

Document No.	NDT500666	Version	1	Implementation date	20150714
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### 13. 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.

Document No.	NDT500666	Version	1	Implementation date	20150714
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"Storage life is of three years"

record number: LX4.203R-14

