

# Product Specification

Product name: Molded Case Circuit Breaker (MCCB)

Product model: NDM2-400

Date: 20111122

Prepared by	Reviewed by	Approved by
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<b>Nader 良信电器</b>	Document name	Product Specification	Document No.	NDT500085
	Product model and name	NDM2-400 Molded Case Circuit Breaker	Version	2
			Implementation date	20160701

### Revision History

Version	Revision Content	Revision Date	Revised by
1	10. The number of plain washers in the accessory list is changed to 8/set from 4/set.	20120718	Xu Saijin
2	Appearance version upgrade	20160610	Peng Haoran

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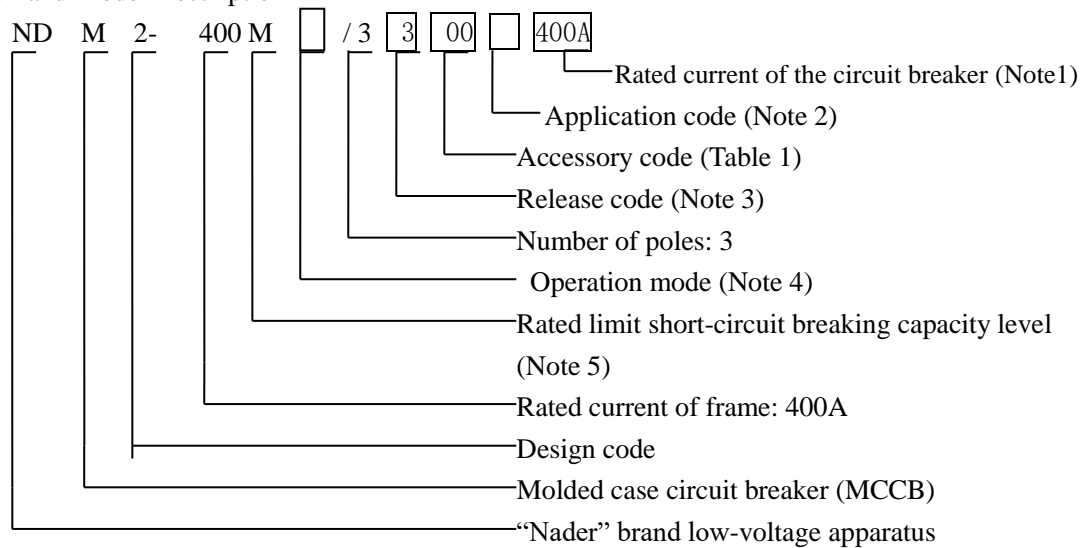
### 1. Applicable Scope and Purpose

NDM2 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



### 3. Specification and Model Description



Note 1: The rated current is: 225A, 250A, 315A, 350A, 400A.

Note 2: Application code: No code is available for the circuit breaker for distribution; the protection motor type is represented as 2.

Note 3: Release code

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0: Tripper (none)

2: Instantaneous tripper only

3: Complex tripper

Note 4 Operation mode:

No code is available for the direct handle-operated mode

P: Motor-operated

Z: Rotation handle

Note 5: Rated limit short-circuit breaking capacity level:

C: Basic type

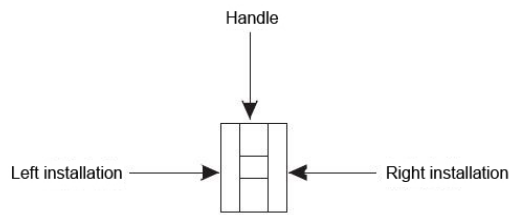
L: Standard type

M: Relatively high breaking type







H: High breaking type

















































































































































































































































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Table 1: Comparison Table of Accessory Code:



Legend :

-  Single auxiliary contact
-  Dual-auxiliary contact
-  Alarm contact
-  Shunt release
-  Under-voltage release
-  (Single auxiliary & alarm) contact

Accessory code	Accessory name	Installation position		Model		NDM2-250		NDM2-400		NDM2-630		NDM2-800	
		Left	Right	3	4	3	4	3	4	3	4	3	4
00	None	---											
10	Shunt release												
20	Dual-auxiliary contact												
21	Single auxiliary contact												
30	Under-voltage release												
40	Shunt release, dual-auxiliary contact												
41	Shunt release, single auxiliary contact												
50	Shunt release, under-voltage release												
60	Two sets of dual auxiliary contacts												
61	Two sets of single auxiliary contacts												
62	Dual-auxiliary contact, single auxiliary contact												
70	Under-voltage release, dual-auxiliary contact												
71	Under-voltage release, single auxiliary contact												
08	Alarm contact												
18	Shunt release, alarm contact												
28	Dual-auxiliary contact, alarm contact												
38	Under-voltage release, alarm contact												
48	Shunt release, single auxiliary/alarm contact												
58	Single auxiliary/alarm contact												
68	Dual-auxiliary contact, single auxiliary/alarm contact												
78	Under-voltage release, single auxiliary/alarm contact												

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#### 4. Main Technical Parameters

##### (1). Electrical characteristics

- ▲ Rated insulation voltage  $U_i$ : 1000V
- ▲ Rated working voltage  $U_e$ : AC 400V or AC 690V (only for Type M)
- ▲ Rated current of frame  $I_{nm}$ : 400A
- ▲ Rated limit short-circuit breaking current  $I_{cu}$ :  
 Type C: 35KA  
 Type L: 50KA  
 Type M: 65KA (AC 400V)  
 15KA (AC 690V)  
 Type H: 100KA
- ▲ Rated operating short-circuit breaking current  $I_{cs}$ :  
 Type C: 26KA  
 Type L: 38KA  
 Type M: 49KA (AC 400V)  
 11KA (AC 690V)  
 Type H: 75KA
- ▲ Rated working current of the auxiliary contact: 0.4A
- ▲ The conventional thermal current of the auxiliary contact: 3A

##### (2). Operating performance

- ▲ With electricity: 7,500 times
- ▲ Without electricity: 10,000 times

##### (3). Connection capacity:

Rated current A	225	250	315, 350	400
Wire cross-section area $\text{mm}^2$	95	120	185	240

##### 4) Tightening torque value of terminal/mounting screw

Rated current of frame	Thread diameter	Torque value (N·m)
NDM2-400	M10	20
	M6	6

##### 5 High-altitude derating factor

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	$0.938I_n$	$0.743U_e$	$0.752U$

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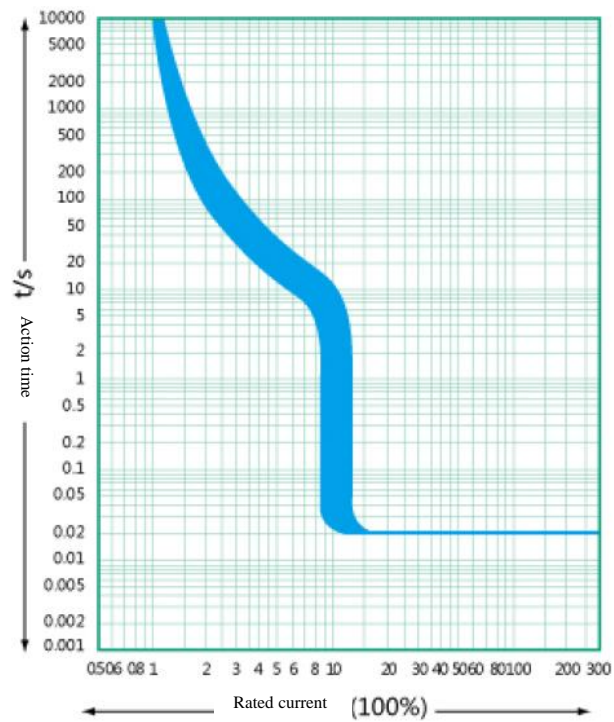
## 5. Normal Working Environment

### Normal Working Environment

- ▲ Altitude:  $\leq 2000\text{m}$ .
- ▲ Ambient temperature:  $-35^{\circ}\text{C} \sim +70^{\circ}\text{C}$ .
- ▲ Pollution level: 3.
- ▲ The product can withstand the effects of wet air, salt mist and oil mist.
- ▲ The maximum gradient is  $22.5^{\circ}$ .
- ▲ The product can be disposed in places that are free from explosive media, media corrosive to metal, insulation damaging gas, and conductive dust.

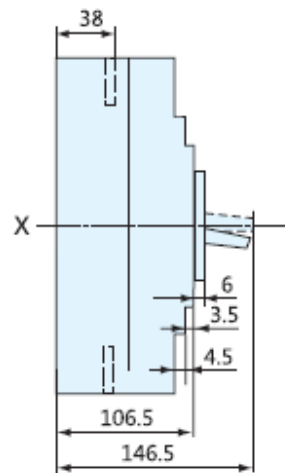
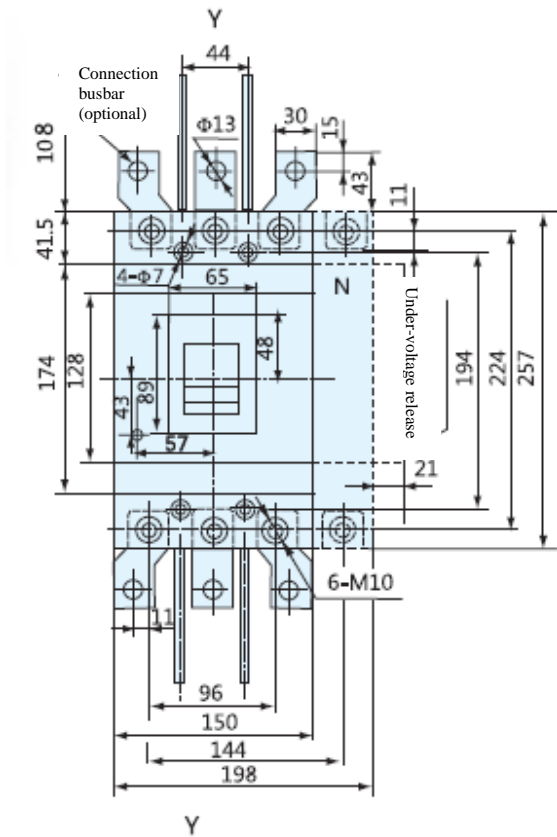
The product should be installed free from snow and rain.

## 6. Tripping Characteristics

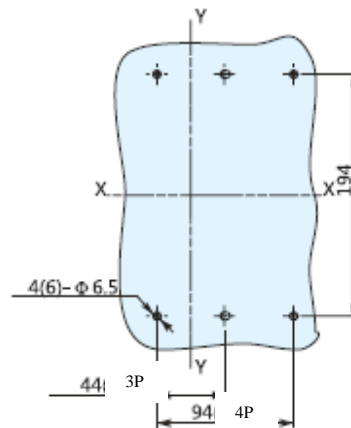


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### 7. Outline and Installation Dimensions



Hole Dimensions of Front-plate Connection Mounting Plate



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

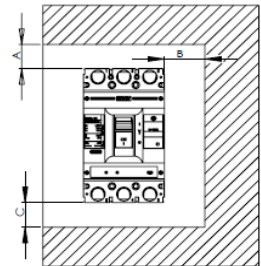


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Mounting distance (mm)

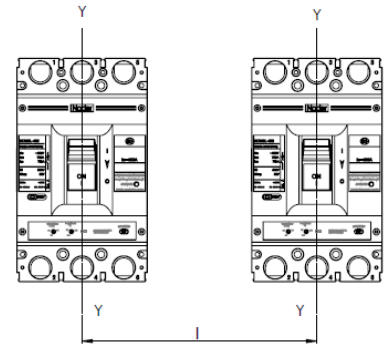
1) Insulation distance mounted in the metal cabinet (unit: mm), as shown below:

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		
Specification				
NDM2-400	25	120	35	35



2) Minimum center distance between rowed circuit breakers:

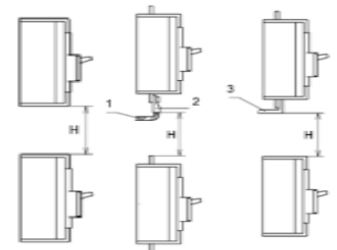
Specification	Width of circuit breaker (mm)		Center distance (mm)	
	3P	4P	3P	4P
NDM2-400	150	198	190	238



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

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
NDM2-400	155	155



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.

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#### 8. Installation Mode

Installation mode: To be installed horizontally or vertically.

#### 9. 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 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.

#### 10. List of Accessories and Installation

SN	Name	Specification	Quantity/Set
1	Cross small pan-head screws	M6X70	4 (3P)/6 (4P)
2.	Plain washer	6	8(3P)/12 (4P)
3	Spring washer	6	4 (3P)/6 (4P)
4	Hexagon nut	M6	4 (3P)/6 (4P)
5	Phase partition	—	4 (3P)/6 (4P)
6	Plug	—	6 (3P)/8 (4P)

#### 11. 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.