

Shanghai Liangxin Electrical Co., Ltd.

NDM3G-250 Product Specification

(IPD-ENG-DEV-T20 A1 2016-09-23)

Prepared by	孙兰萍	Date	2021-09-29
Reviewed by	徐富平	Date	2021-09-30
Countersigned by	黄金华	Date	2021-09-30
Approved by	丁飞	Date	2021-09-30

Revision History					
Version	Revision Reason/Content	Implementati on Date	Prepared by	Reviewe d by	Approve d by
0	Newly added	5/8/2020	Wang Hu	Peng Haorang	Hu Qi
1	Update the product appearance picture and product dimension outline drawing	30/9/2021	Sun Lanping	Xu Fuping	Ding Fei

1. Applicable Scope and Purpose of Circuit Breaker

The NDM3G-250 molded case disconnecting switch (hereinafter referred to as switch) applies to infrequent switching of circuits with the AC 50/60Hz, the working voltage of AC 690V and DC 1000V, and the working current of 250A, with the load capacity. They can achieve effective isolation between the electric equipment and the power supply to guarantee the safe and reliable maintenance.

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



Picture of the Product

3. Specification and Model Description of Circuit Breaker

<u>ND</u>	<u>M</u>	<u>3</u>	<u>G</u>	<u>-</u>	<u>250</u>	<u>□</u>	<u>/</u>	<u>□</u>	<u>□</u>	<u>□</u>	<u>□</u>
1	2	3	4	5	6	7	8	9	10	11	
SN	SN name		NDM3G								
1	Enterprise code		ND: "Nader" low-voltage apparatus								
2	Product code		M: Molded case circuit breaker (MCCB)								
3	Design SN		3								
4	Derived code of the series		G: Disconnecting switch								
5	Shell frame level		250								
6	Operation mode		No code: Direct handle-operated mode								
			P: Motor-operated								
			Z: Rotary operation								
7	Number of poles		2,3, 4								
8	Release code		0: Release (none)								
9	Accessory code		See Table 1								
10	Rated current		See Table 2								
11	Cabling type		No code: Normal product								
			P: Connection busbar								
			Z1: Rear-plate connection								
			Z2H: Plug-in rear-plate connection								
			Z2Q: Plug-in front-plate connection								
			Z3H: Integrated plug-in rear-plate connection								
			Z3Q: Integrated plug-in front-plate connection								

Table 1: Comparison Table of Accessory Code:

<div><div><div>Handle</div><div>Left installation</div><div>Right installation</div></div></div>				<div>Legend</div> <div><div><div></div>Single auxiliary contact</div><div><div></div>Dual-auxiliary contact</div><div><div></div>Alarm contact</div><div><div></div>Shunt release</div><div><div></div>Under-voltage release</div><div><div></div>Auxiliary alarm contact (a single accessory features the auxiliary and alarm functions)</div></div>		
Accessory code	Accessory name	Installation Position	Model	NDM3G-250		
				2	3	4
00	N/A			—		
20	Dual-auxiliary contact			<div></div>	<div></div>	
21	Single auxiliary contact			<div></div>	<div></div>	

4. Main Technical Parameters of Circuit Breaker

Table 2 Main Technical Parameters of Circuit Breaker

Model		NDM3G-250		
Rated current of frame Inm (A)		250		
Rated current In (A)		250		
Rated insulation voltage Ui (AC V)		1000		
Rated impulse withstand voltage Uimp (V)		8000		
Rated working voltage Ue (V)		AC380/400/415 AC500, AC660/690 DC500	AC380/400/415 AC500, AC660/690 DC750	AC380/400/415 AC500, AC660/690 DC1000
Power frequency withstand voltage U (1min) (V)		3500		
Utilization category		AC-21A/22A/23A, DC-21B/22B		
Number of poles		2	3	4
Rated short circuit making capacity Icm (kA)		3	3	3
Rated short-time withstand current Icw (kA/1s)		3	3	3
Operating performance (times)	Electrical life		5000	
	Mechanical life	Maintainable free life	10000	
		Maintainable life	20000	

4.1 Selection of the circuit breaker connecting bus or cable cross-section area:

Table 3 Selection of the NDM3G-250 Connecting Bus or Cable Cross-section Area

Rated current (A)	250
Wire cross-section area (mm ²)	120

4.2 Tightening Torque of the Circuit Breaker Terminal and Mounting Screw

Table 4 Tightening Torque of the Circuit Breaker Terminal and Mounting Screw

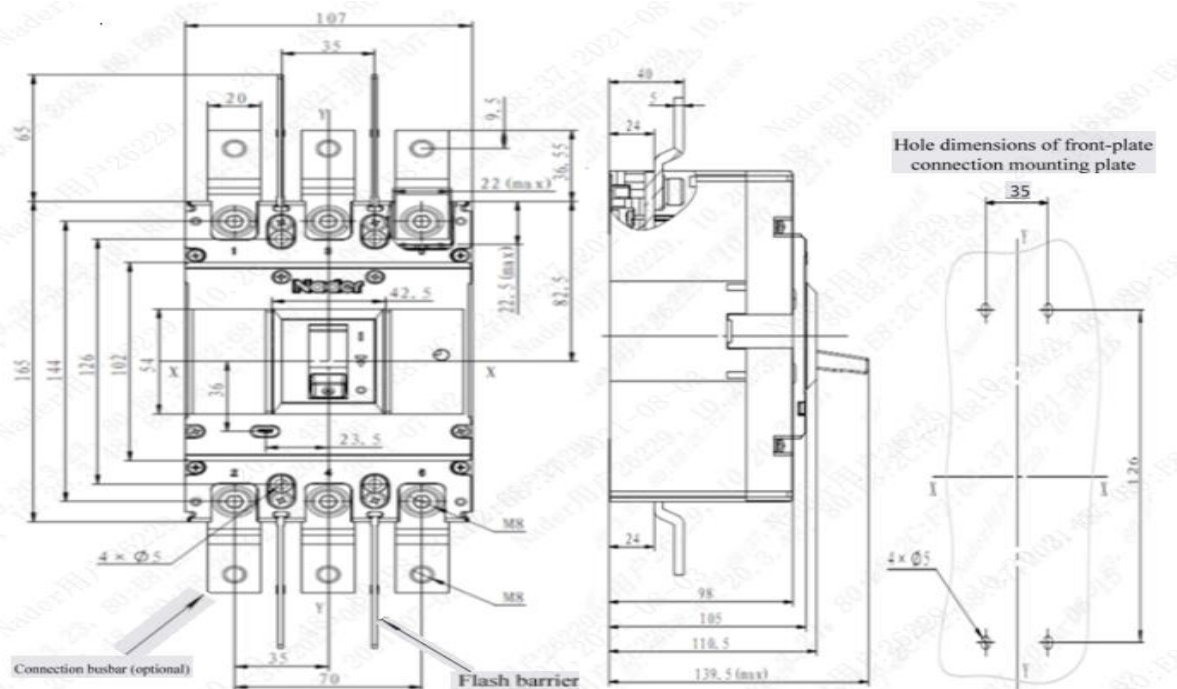
Model	Thread diameter (mm)	Torque (N·m)
NDM3G-250	M8	12
	M4	2.4

5. Normal Working Environment of Circuit Breaker

- 1) The altitude of the installation site doesn't exceed 2,500m. See the "High-altitude Derating Factor Table of Circuit Breaker" for the derating factor at the altitude;
- 2) The ambient temperature is -35℃ ~ + 70℃; the average within 24 h shall not be more than +35℃. If the ambient temperature is higher than +50℃, the user needs to reduce the capacity. See the "Derating Factor Table of Temperature Change for the Circuit Breaker" for the derating factor;
- 3) Its relative humidity at an ambient temperature of +40℃ should not exceed 50%. A higher relative humidity is allowed at a lower temperature. For example, the relative humidity at 20℃ can reach 90%; for frost due to temperature change, the corresponding measures should be taken;
- 4) The product can withstand the effects of wet air, salt mist, oil mist and mould;
- 5) The installation category of the circuit breaker connected to the main loop is: Category III (power distribution and control level), The installation category of the circuit breaker not connected to the main loop is: Category II (load level);
- 6) The pollution level is Level 3;
- 7) The product should be installed in places that are free from explosive media, media corrosive to metal, insulation damaging gas, and conductive dust, which should be also avoided from snow and rain;
- 8) In case of stricter user conditions than the above description, negotiate with the manufacturer.

6. Outline and Mounting Hole Dimensions of Circuit Breaker

6.1 Outline and mounting hole dimensions of circuit breaker



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

6.2 Safe mounting distance of circuit breaker

Table 7 Insulation Distance Mounted in the Metal Cabinet (Unit: mm)

Mounting distance	A (inlet wire end to the cabinet face)		B (distance from side to the cabinet face)	C (outlet wire end to the cabinet face)
Model	With a terminal cover	Without a terminal cover		
NDM3G-250	25	65	30	30

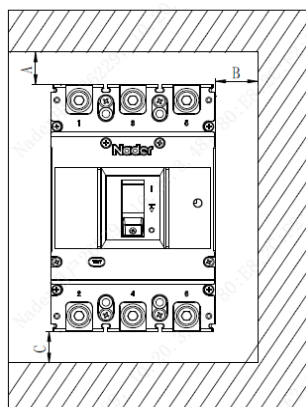


Table 8 Minimum Center Distance between Rowed Circuit Breakers (Unit: mm)

Model	Width of circuit breaker		I Center distance	
	3 poles	4 poles	3 poles	4 poles
NDM3G-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.

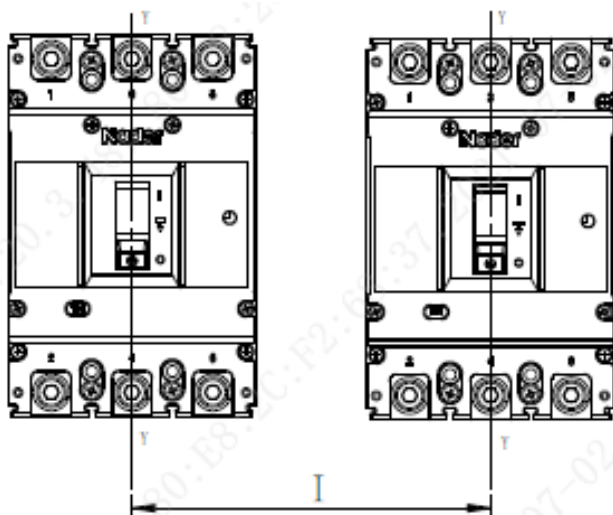


Table 9 Minimum Distance between Stacked Circuit Breakers (Unit: mm)

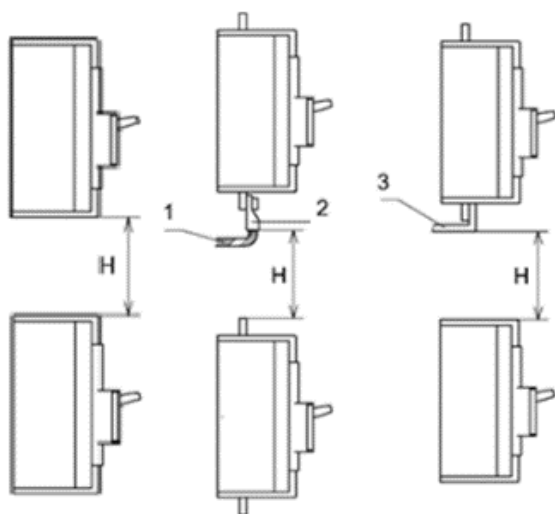
Model	H (distance of circuit breaker from bottom)	
	With a terminal cover	Without a terminal cover
NDM3G-250	90	93

Note: 1) Bare cable connection

2) Cable insulating connection

3) Connection without insulation

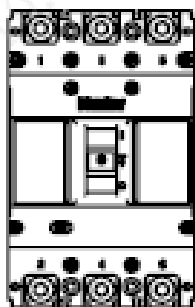
Requirements: Check whether the terminal cover or phase partition is assembled properly before products are energized.



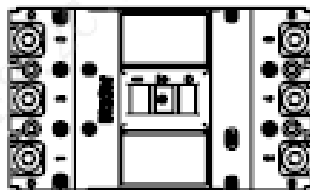
8. Installation Direction of Circuit Breaker

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

9. Packaging and Storage of Circuit Breaker

Minimum packaging quantity: 1 piece/box. The packaged products should be stored in a warehouse with the air ventilation and the relative humidity no more than 80% when the ambient temperature is $-40^\circ\text{C} \sim +75^\circ\text{C}$. No acidic alkaline or other corrosive gas exists in the ambient air in the warehouse. Under the conditions above, the storage period shall be no more than three years since the manufacturing date.

10. Installation Direction of Circuit Breaker

SN	Name	Specification	2/3P Quantity/Set	4P Quantity/Set
1	Cross small pan-head screw	M4×45	4	6
2	Hexagon nut	M4	4	6
3	Spring washer	4	4	6
4	Plain washer	4	4	6
5	Phase partition	—	4	6

11. Circuit Breaker Notes

- 1) Various characteristics and accessories of the circuit breaker are set in the factory. The circuit breaker, tripping unit or other accessories can only be adjusted, installed and maintained by the trained or qualified professionals according to the parameter requirements of the line

design;

- 2) Ensure that the power supply is off before installing or removing any device;
- 3) 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.