

**Shanghai Liangxin Electrical Co., Ltd.****(NDG3-1000/1250 Product Specification)**

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

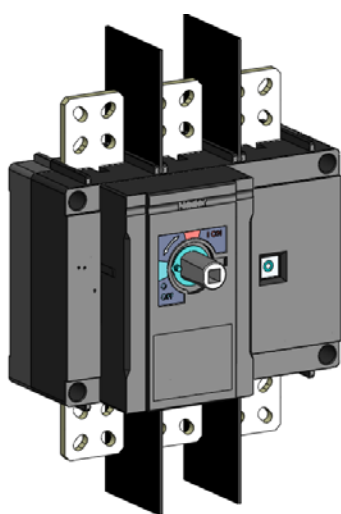
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Reviewed by	Fu Chuantao	Date	2020.05.25
Countersigned by	Jiang Zhaoyong	Date	2020.05.25
Approved by	Wang Jili	Date	2020.05.25

Revision History					
Version	Revision Reason/Content	Implementation Date	Prepared by	Reviewed by	Approved by
0	New addition	20160325	Yu Yanyan	Ding Fei	Shi Wei
1	Operating torque in the main technical parameters changed to 40 in Item 4	20151109	Yu Yanyan	Ding Fei	Shi Wei
2	Update of the external dimension diagram; addition of related accessories of the inside-cabinet handle; template update	20181128	Wang Jili	Zhang Jiazheng	Zhou Bo
3	Update of AC-1000V related parameters	20190704	Wang Jili	Zhang Jiazheng	Zhou Bo
4	Addition of the auxiliary switch parameter data	20190429	Zheng Lei	Fu Chuantao	Wang Jili

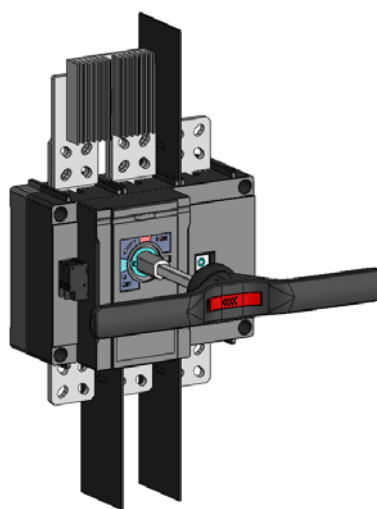
## 1. Applicable Scope and Purpose

The NDG3-1000/1250 series of disconnecting switches are applicable to electric systems with the rated voltage not higher than DC1000V or AC1000V and the rated current not higher than 1000A/1250A. They can be connected and disconnected at a low frequency to safely isolate various low-voltage circuits in the photovoltaic field.

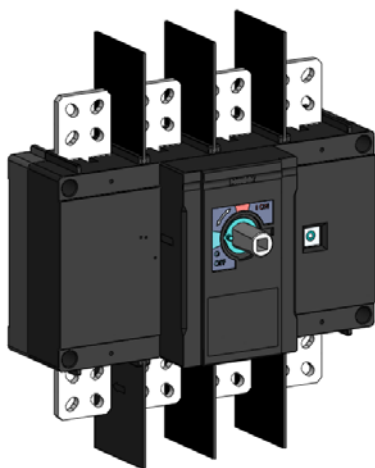
## 2. Picture of the Product (The picture below is for reference only; please subject to the kind)



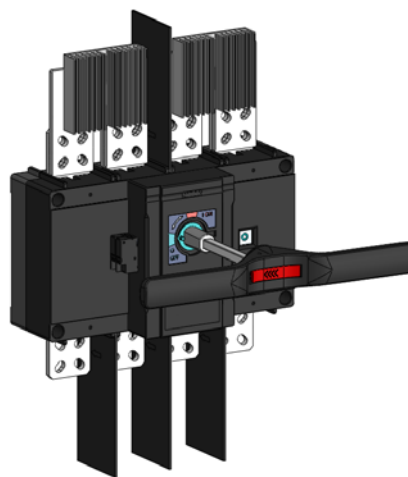
NDG3-1000/1250 3-pole basic type



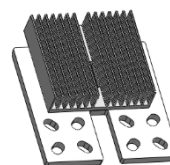
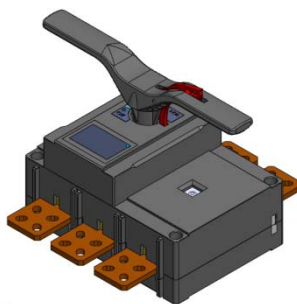
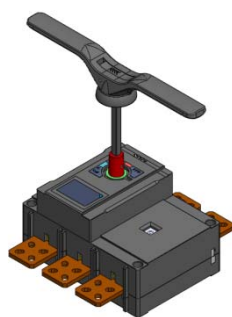
NDG3-1000/1250 3-pole with accessories



NDG3-1000/1250 4-pole basic type



NDG3-1000/1250 4-pole with accessories



Operation product outside a cabinet

Inside-cabinet operation product

Auxiliary contact

Short busbar

### 3. Specification and Model Description

#### 3.1 NDG3-1000/1250 model interpretation

ND G 3 - □ / □ □ □

1 2 3 4 5 6 7

SN	Code name	Code description
1	Enterprise code	ND "Nader" brand low-voltage electrical device
2	Product code	G Isolating switch
3	Design SN	3
4	Rated current (A)	1000, 1250
5	Number of poles	3: Three poles 4: Four poles
6	Current Type	Uncoded: Normal product Z: DC PV product
7	Handle type	P: Handle outside a cabinet. Specifications of handle outside a cabinet shall be selected additionally, such as SB1-200/G3-1250. K: Inside-cabinet handle.

#### 3.2 Handle model interpretation:

SB 1 - □ / G3-1250

1 2 3 4

SN	SN description	Code description
1	Function code	Handle
2	Design SN	1
3	Square Shaft Code	200: Shaft length 200mm 400: Shaft length 400mm
4	Applicable switch model	G3-1250: suitable for NDG3(A)-1000, 1250 G3A-1250: suitable for NDG3(A)-1000, 1250

**Note:** Installation dimensions of G3-1250 and G3A-1250 cabinet doors are 37.5\*37.5 and 28\*40;

### 3.3 Auxiliary contact models interpretation

E 1 - □ □ / G3-800

1 2 3 4 5

SN	SN description	Code description
1	Function code	Auxiliary contact
2	Design SN	1
3	Pairs of contacts	11: One NO, One NC
4	Auxiliary switch quantity	A: One for each unit B: Two for each unit
5	Applicable switch model	G3-800: suitable for NDG3(A)-500, 630, 800, 1000, and 1250

### 3.4 Short-circuit block model interpretation

MX 1 / G3-1250

1 2 3

SN	SN description	Code description
1	Function code	Short-circuit block
2	Design SN	1
3	Applicable switch model	G3-1250: suitable for NDG3-1000, 1250

## 4. Main Technical Parameters

### 4.1 Main parameters of the disconnecting switch

CCC, TUV and CE certification parameters are as follows:

Parameter name	Category/unit		Description of the specific parameters	
Rated current In	A		1000	1250
Agreed thermal current Ith	A		1250	
Number of poles	Number of		3,4	
Insulation voltage Ui	V		1000	
Rated impulse withstand voltage Uimp	kV		12	
Rated operating	AC-21B	1000V	1000	1250

current Ie (A)	AC-22B	380/400/415V	1000	1250
		660/690V	800	800
	AC-23B	380/400/415V	800	1000
		660/690V	500	500
	DC-22B	750V	1000/3	1250/3
		1000V	1000/4	1250/4
Rated short-time withstand current, Icw	kA 1s		AC: 35 kA DC: 10 kA	
Rated short-circuit making capacity Icm	kA		AC: 50 kA DC: 17 kA	
Mechanical life	Times		5000	
Electrical life	Times		100	
Operating torque	N.m		40	
Wiring screw tighten torque	N.m		14	
Wiring copper bus cross-section	mm <sup>2</sup>		2 pieces, 60×5	2 pieces, 80×5
Installation mode			Screw mounting	
Weight (Kg)	3P		11	
	4P		14	

- Applicable standards: Products conform with GB/T 14048.3; EN 60947-3.
- Frequency: 50/60Hz;
- Certificates: CCC, TUV, and CE.

## 4.2 Main parameters of the auxiliary switch

- Electrical parameters

Rated working voltage:	AC230V	DC250V	DC125V
Rated working current:	16A	0.3A	0.6 A

- Rated insulation voltage: AC1000V
- Agreed thermal current: Ith: 16A
- Rated frequency: 50/60Hz

- Utilization category: AC-15, DC-13
- Protection class: IP20
- Electrical life: 20000 times
- Standard certification: GB/T 14048.5, comply with ROHS

## **5. Normal Working Environment**

1) The ambient air temperature for normal operation ranges in  $-40\sim+70^{\circ}\text{C}$ , and its average temperature within 24h shall not exceed  $+35^{\circ}\text{C}$ ; when the ambient air temperature is above  $+70^{\circ}\text{C}$ , the user should negotiate with the manufacturer.

2) Normal installation altitude shall not exceed 3000m, or otherwise negotiating with the manufacturer.

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, it can be 90% at  $20^{\circ}\text{C}$ . Special measures should be taken to address occasional condensing due to temperature fluctuation.

4) 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 avoided from snow and rain.

5) The product is applicable in an environment with pollution class III.

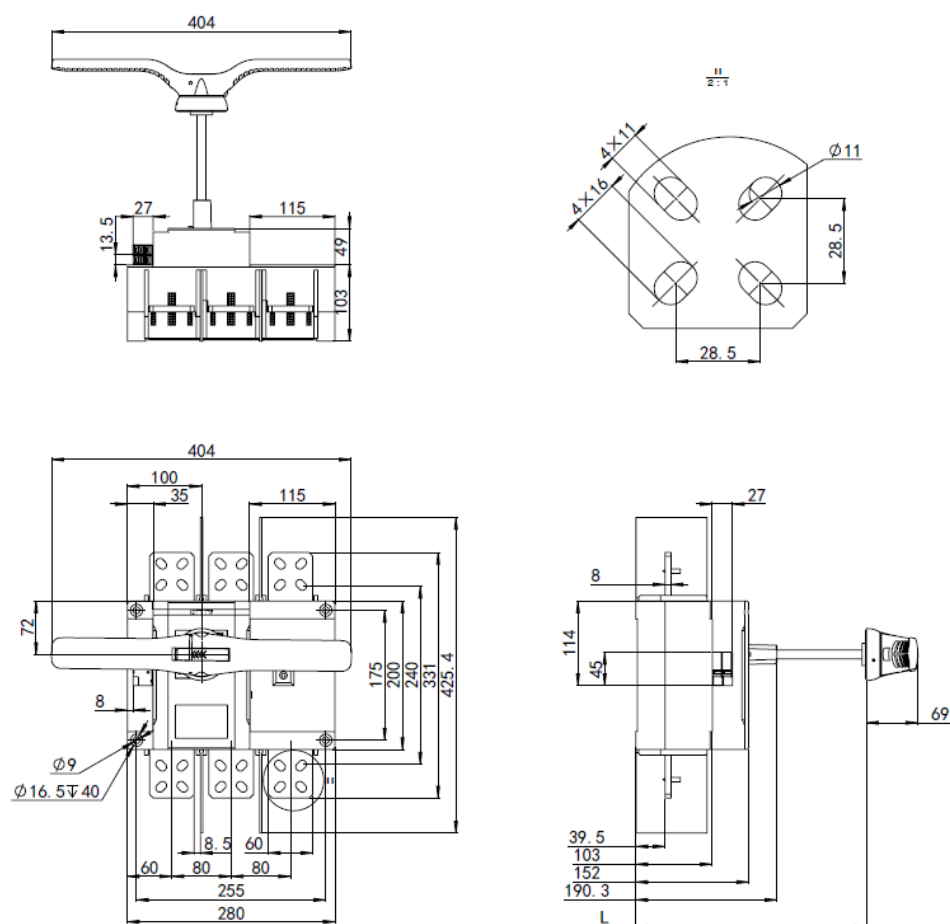
6) Installation category of III and IV.

7) Protection class: IP20; Handle protection class: IP65.

8) Environmental requirements comply with RoHs directives.

## **6. Outline and Installation Dimensions**

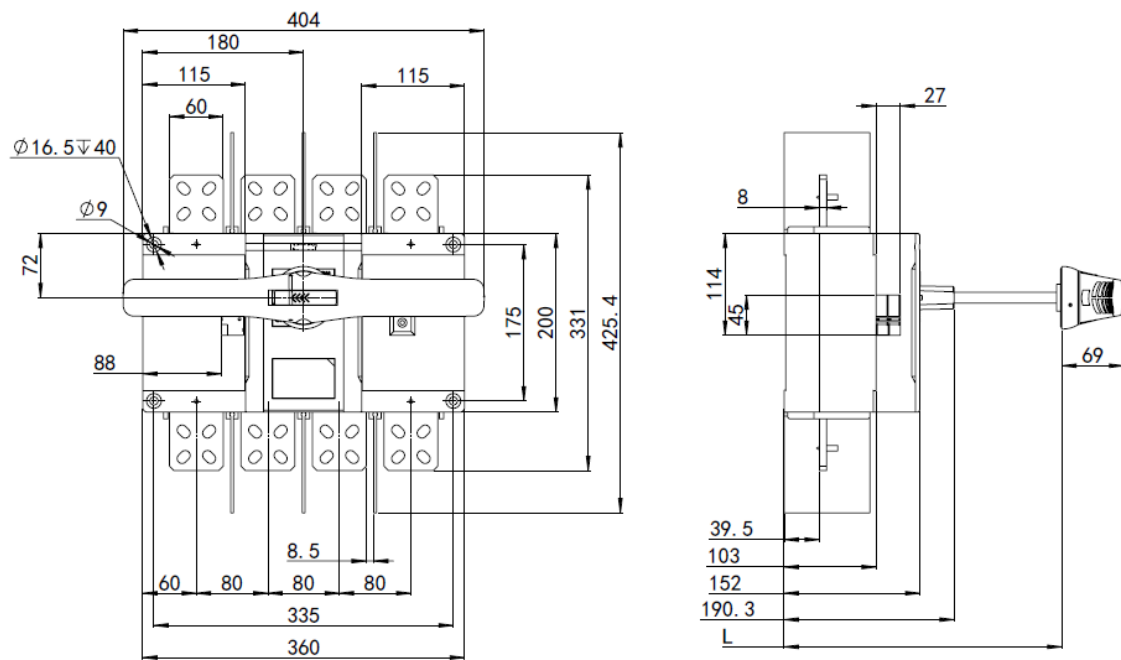
6.1 Outline and installation dimensions of NDG3-1000/1250 3P handle product outside a cabinet: operation handle outside a cabinet: SB1-“A”/G3-1250



$L = "A" + 111$  (unit: mm, A: Square shaft length of handle outside a cabinet)

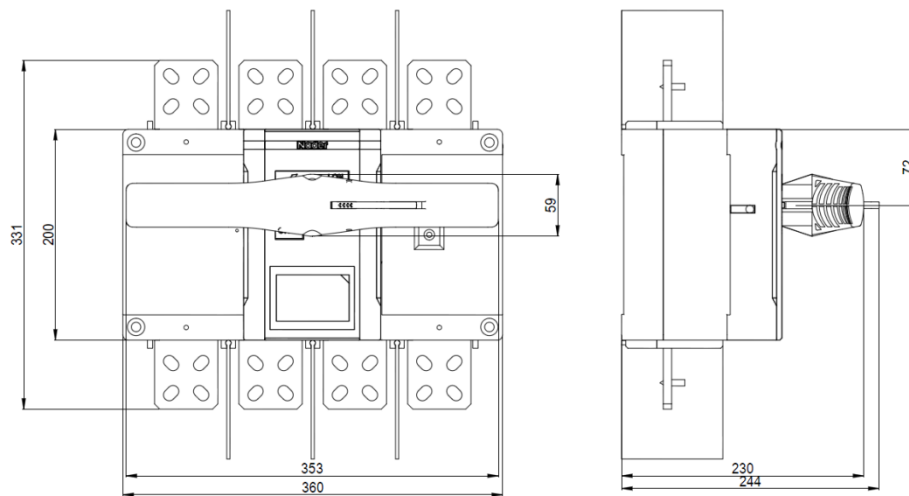
6.2 Outline and installation dimensions of NDG3-1000/1250 4P handle product outside a cabinet: operation handle outside a cabinet: SB1-“A”/G3-1250



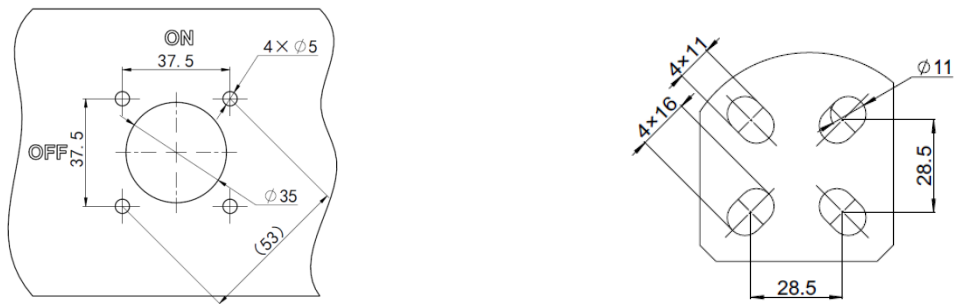


$L = "A" + 111$  (unit: mm, A: Square shaft length of handle outside a cabinet)

### 6.3 External dimensions of NDER3-1000/1250 4P inside-cabinet handle product



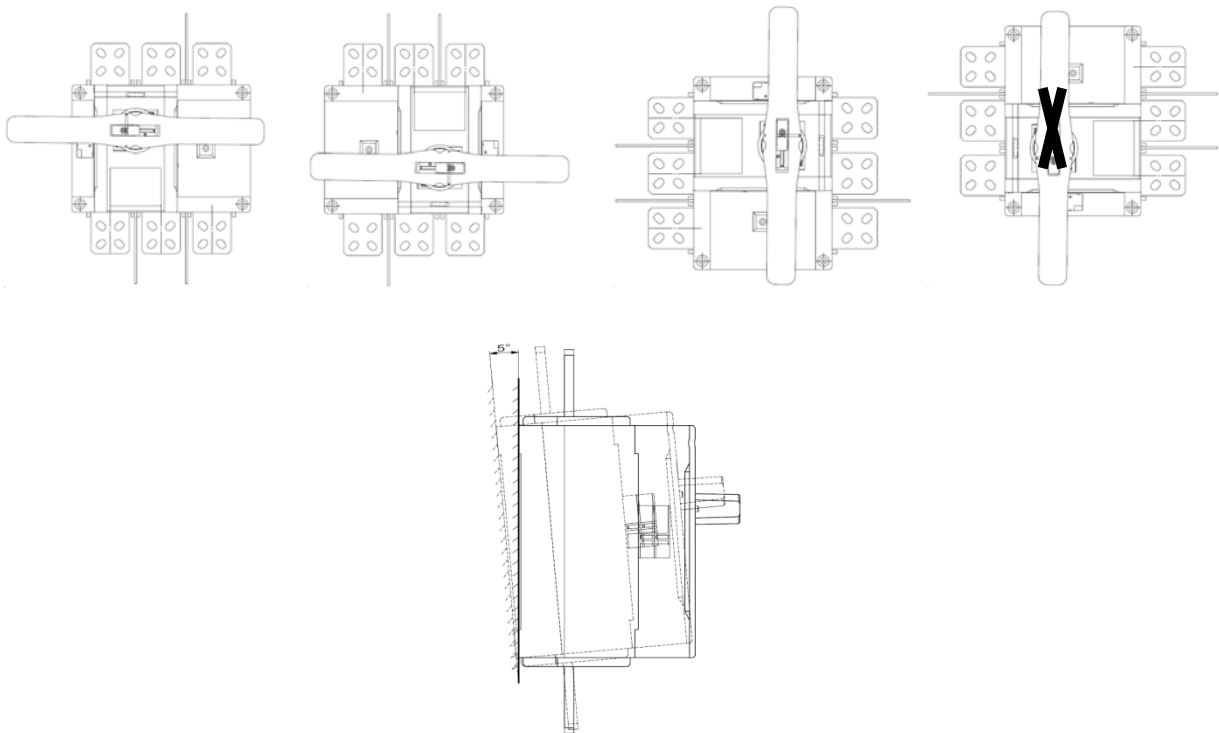
### 6.4 Dimension figure of cabinet door opening: SB1-"A"/G3-1250, dimension diagram of wiring terminal block



## 7. Installation Method and Position

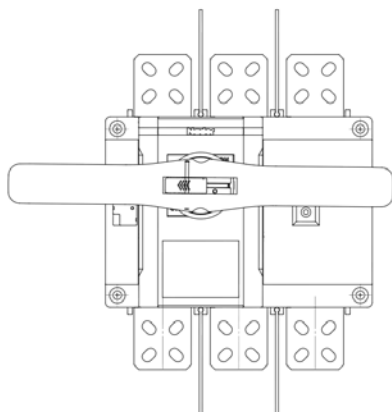
Installation method: Isolating switch screws and handle cabinet door installation;

Installation position: vertical installation and horizontal installation. In case of vertical installation, the contact inspection window shall not position upward, as the 4th method shown in the figure below. The vertical panels installed shall have the inclination no more than  $5^\circ$  with the direction as shown in the figure below;

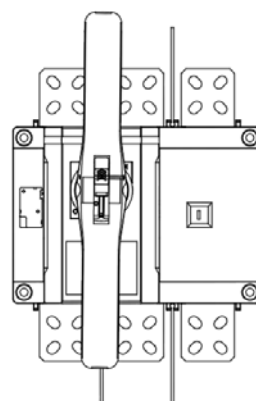


The inclination for vertical  
inclination shall be  $\leq 5^\circ$

Status position: This product has two status positions, making position "I/ON" and breaking position "O/OFF", as shown in the figure below.



Breaking position



Making position

## 8. Packaging and Storage

### 8.1 Isolating switch packaging (maximum packaging)

SN	Specification	Number of poles	Quantity
1	NDG3-1000	3P	1 unit/box
		4P	1 unit/box
2	NDG3-1250	3P	1 unit/box
		4P	1 unit/box

### 8.2 Accessories packaging (maximum packaging)

Name	Quantity
Handle	2 sets/box, 4 box/carton
Auxiliary contact	16 sets/box, 40 boxes/carton
Short-circuit block	2 sets/box, 2 box/carton

### 8.3 Transportation and Storage

During storage, the influences from rain and snow should be prevented, and warehouse should be in excellent ventilation with the relative humidity less than 80% and the temperature between  $-40^{\circ}\text{C}$  and  $+85^{\circ}\text{C}$ . No acidic alkaline or other corrosive gas exists in the ambient air in the warehouse. Under the above conditions, the storage period shall be no more than three years since the manufacturing date.

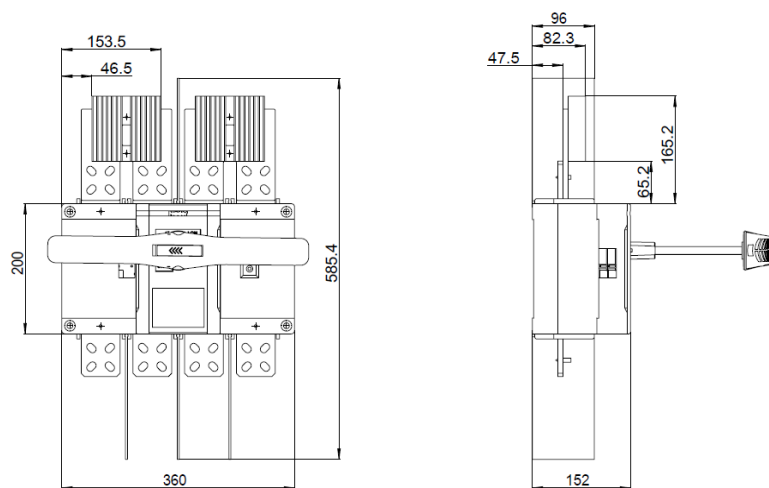
## 9. List of Accessories and Installation

### 9.1 Accessories list

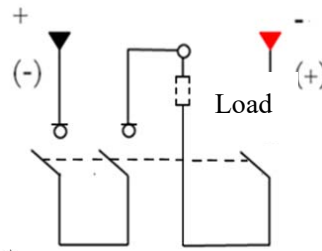
SN	Name	Accessories installation and quantity
1	Handle	Mounted on the cabinet door, connected to the body with square shaft
2	Auxiliary contact	Mounted on the front left of the main switch, up to two units
3	Short bus bar	Mounted on the Terminal board of the main switch, to achieve the connection with the main pole

### 9.2 NDG3-1000/1250 product with short-circuit block, appearance and wiring method

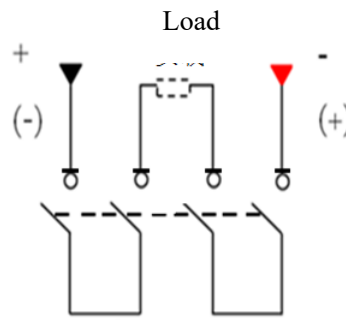
#### Outline dimensions of short busbar



#### Three-pole string connection mode



Four-pole string connection mode



## 10. Precautions

- 1) Any quality problem due to disassembly without permission will be the liability of the user;
- 2) Under the energized operation state, do not touch the exposed portion of the uninsulated parts on the circuit breaker with bare hand;
- 3) Reliable cabling is required to prevent the terminals from being burnt out due to abnormal heat at the terminals;
- 4) Connecting wires shall be fastened in the distribution cabinet rack. The switch shall not undertake the weight of the conductor. Before fastening the conductor, it is required to make the plane of the busbar or cable terminal in parallel to that of the wiring terminal of the switch. After the conductor is connected with the wiring terminal of the switch by using the bolts, the switch shall not undertake any mechanical stress.