

Shanghai Liangxin Electrical Co., Ltd.

(NDG3A-1000/1250 Disconnecting Switch)

Product Specification

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

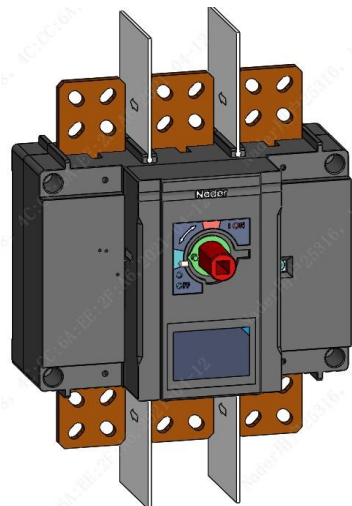
Prepared by	樊聪	Date	2022-09-01
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Countersigned by	王浩 1	Date	2022-09-01
Approved by	胡琪	Date	2022-09-02

Revision History					
Version	Revision Reason/Content	Implementati on Date	Prepared by	Reviewe d by	Approve d by
0	New addition	20190704	Wang Jili	Cao Xuehu	Zhou Bo
1	Addition of the auxiliary switch parameter data	20200421	Zheng Lei	Jiang Zhaoyon g	Wang Jili
2	Change the product picture	20210415	Chen Zhenzhen	Zhao Zhenxing	Wang Jili

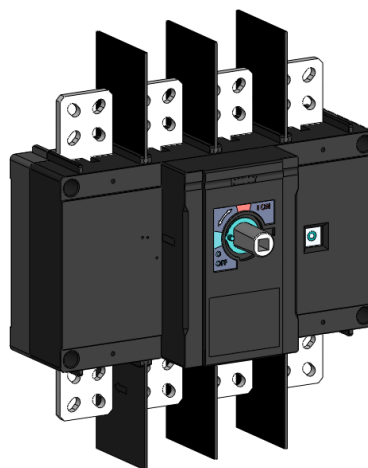
1. Application Scope and Purpose

The NDG3A-1000/1250 series of disconnecting switches are applicable to electric systems with a rated voltage not higher than DC 1000V or AC 1000V and a 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.

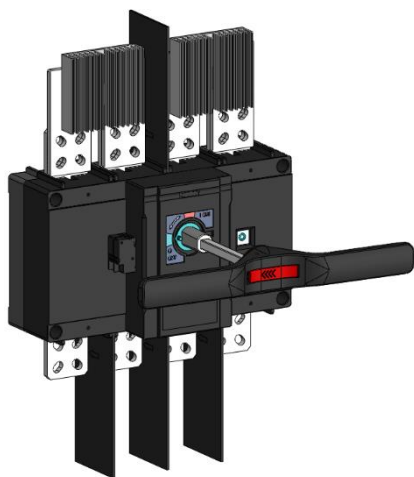
2. Picture of the Product



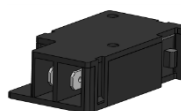
NDG3A-1000/1250 3-pole basic type



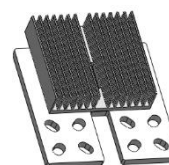
NDG3A-1000/1250 4-pole basic type



NDG3A-1000/1250 4-pole with accessories



Auxiliary contact



Short busbar

Note: The above picture is for the structure reference; the specific kind prevail.

3. Specifications and Models Description

3.1 Product model interpretation

Model and Description		
<u>ND G 3A</u> - □ / □ □ □ 1 2 3 4 5 6 7		
SN	SN name	Code
1	Enterprise code	ND: Nader low-voltage apparatus
2	Product code	G: Disconnecting switch
3	Design code	3A
4	Rated current (A)	1000, 1250
5	Number of poles	3: Three poles 4: Four poles
6	Current Type	Z: DC PV product Uncoded: Normal product
7	Handle type	P: Handle outside a cabinet. Specifications of handle outside a cabinet shall be selected additionally, such as SB1-200/G3A-1250. K: Inside-cabinet handle.

3.2 Model interpretation of handle outside a cabinet

Model and Description		
<u>SB 1</u> - □ / <u>G3A-1250</u> 1 2 3 4		
SN	SN name	Code
1	Function code	Handle
2	Design SN	1
3	Square Shaft Code	200: Shaft length of 200mm 400: Shaft length 400mm
4	Applicable switch model	G3A-1250: suitable for NDG3(A)-1000, 1250

3.3 Auxiliary contact model interpretation

Model and Description		
<u>F</u> <u>1</u> - <u>□</u> <u>□</u> / <u>G3-800</u> 1 2 3 4 5		
SN	SN name	Code
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 busbar model interpretation

Model and Description		
<u>MX</u> <u>1</u> / <u>G3-1250</u> 1 2 3		
SN	SN name	Code
1	Function code	Short bus bar
2	Design SN	1
3	Applicable switch model	G3-1250: suitable for NDG3(A)-1000, 1250

4. Main Technical Parameters

4.1 Main parameters of the disconnecting switch

Parameter name	Category/unit		Description of the specific parameters	
Rated current In	A		1000	1250
Agreed thermal current Ith	A		1250	
Number of poles	Pole		3, 4	
Insulation Voltage Ui	V		1000	
Rated impulse withstand voltage Uimp	kV		12	
Rated working current Ie (A)	AC-21B	1000V	1000	1250
	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 ²		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 14048.1; GB/T 14048.3; IEC 60947-1; IEC 60947-3
- Rated frequency: 50/60Hz
- Certified: 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
- Usage category: AC-15, DC-13
- Protection class: IP20
- Electrical life: 20000 times
- Standard certification: GB/T 14048.5
- Comply with ROHS 2.0

5. Normal Working Environment

- 1) The ambient air temperature for normal operation ranges is -40~+75°C; when the ambient air temperature is above +70 °C, the user should negotiate with the manufacturer.

NDG3 (A) /NDG3V Derating Coefficient Table In High Ambient Temperature					
Ambient temperature	70°C	75°C	80°C	85°C	90°C
Power-frequency withstand voltage	2200V	2200V	2200V	2200V	2200V
Correction factor of operational current	1	0.95	0.9	0.8	0.7
Correction factor of operational voltage	1	1	1	1	1

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

NDG3 (A) /NDG3V Derating Coefficient Table In High Altitude Place					
Altitude	2000m	2500m	3000m	3500m	4000m
Power-frequency withstand voltage	2200V	2200V	2200V	2000V	1800V
Correction factor of operational current	1	1	0.98	0.93	0.9
Correction factor of operational voltage	1	0.96	0.90	0.85	0.75

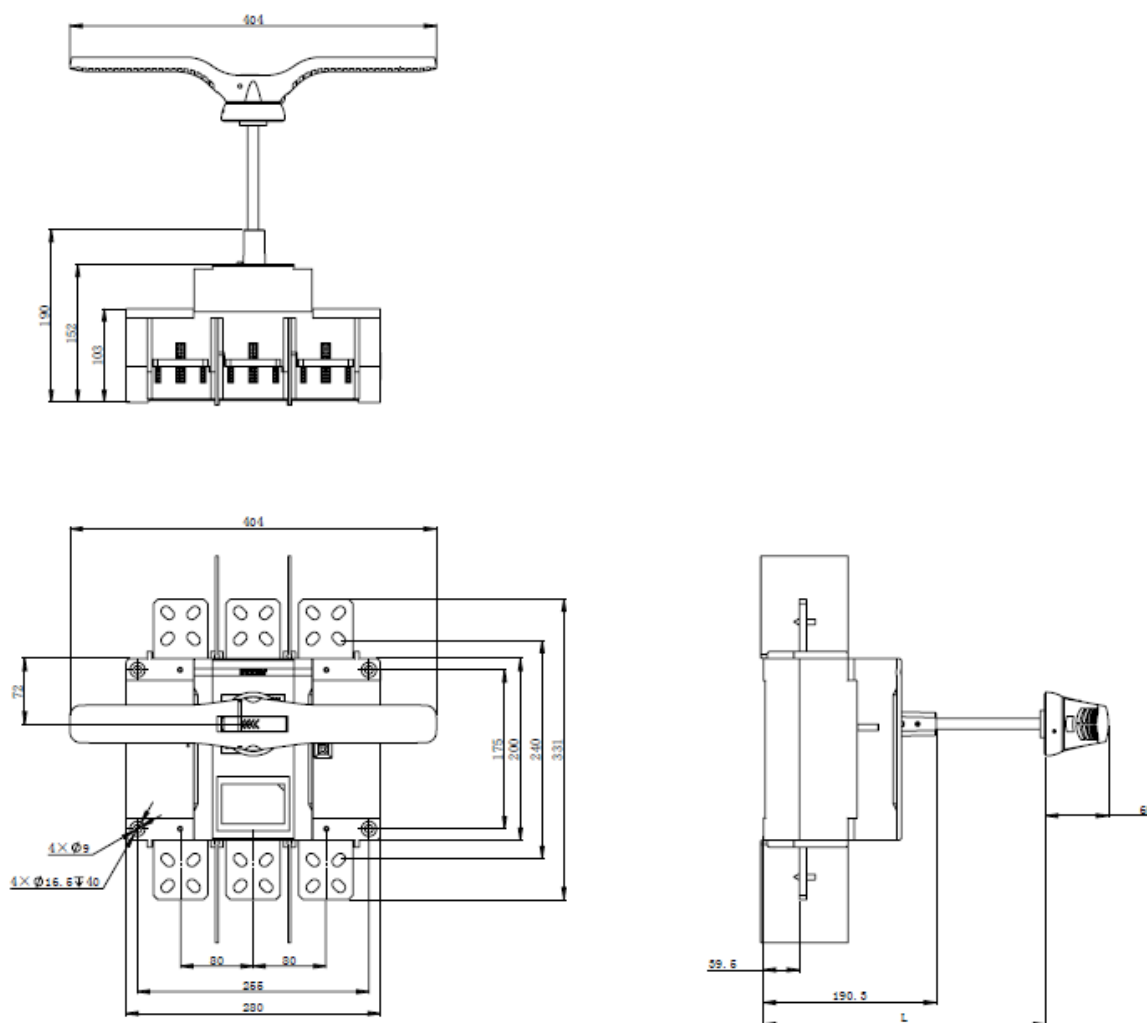
- 3) The relative humidity at an ambient temperature of +40°C should not exceed 50%. A higher relative humidity is allowed at a lower humidity. For example, it reaches 90% at 20°C. Special measures should be taken to address occasional condensing due to temperature fluctuation.

- 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) Pollution level: Level 3
- 6) Installation category: III and IV.
- 7) Protection class: IP20 for the complete appliance, handle outside a cabinet: IP65.
- 8) Environmental requirements comply with RoHS 2.0 directives.

6. Outline and Installation Dimensions

6.1 Outline and installation dimensions of NDG3A-1000/1250 3P handle product outside a cabinet

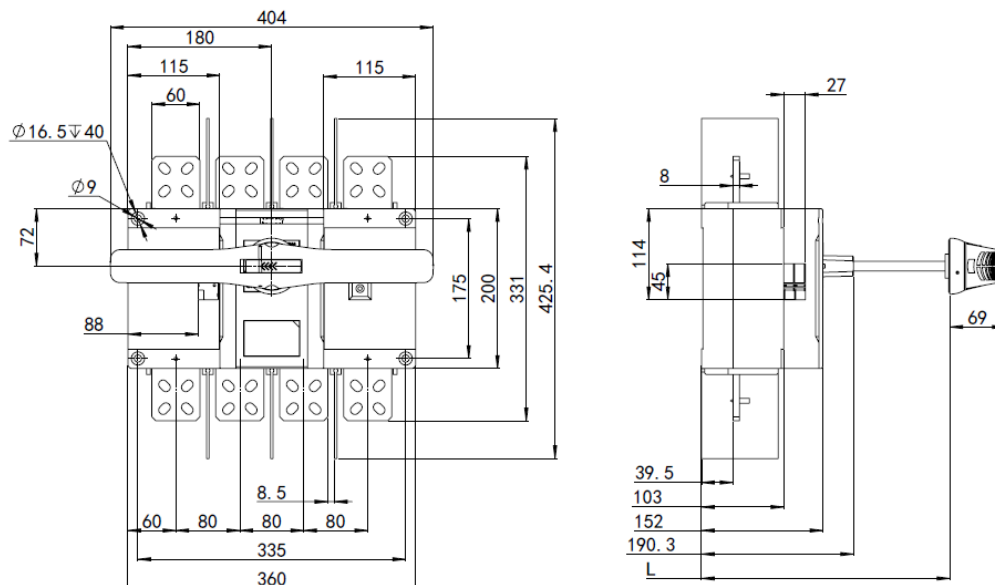
Operation handle outside a cabinet: SB1-“A”/G3A-1250



$L = "A" + 116$ (unit: mm, A: Square shaft length of handle outside a cabinet)

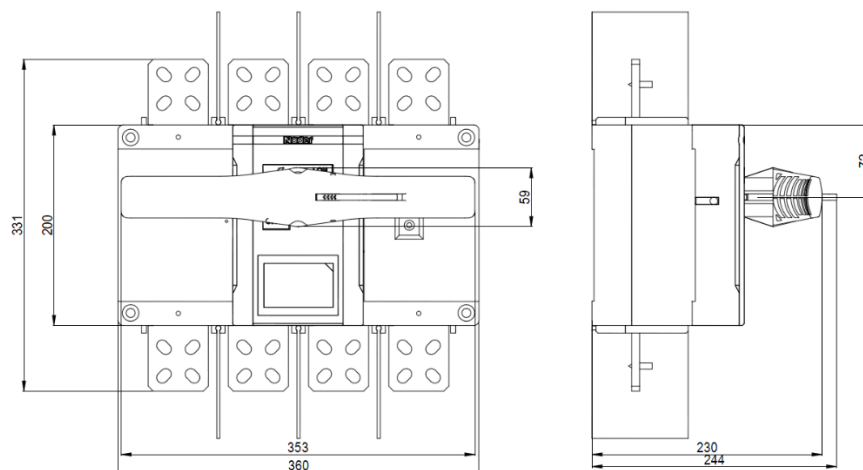
6.2 Outline and installation dimensions of NDG3A-1000/1250 4P handle product outside a cabinet

Operation handle outside a cabinet: SB1-“A”/G3A-1250

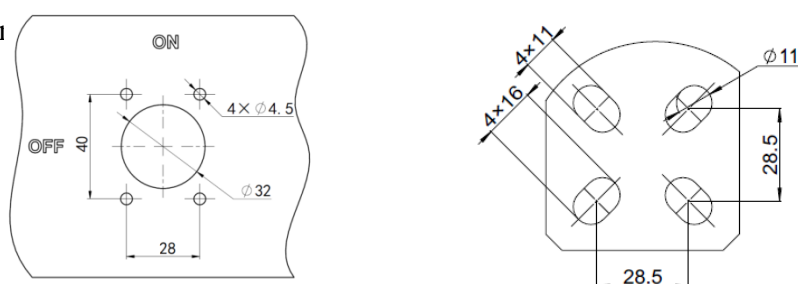


$L = "A" + 116$ (unit: mm, A: Square shaft length of handle outside a cabinet)

6.3 Outline dimensions of NDG3A-1000/1250 4P inside-cabinet handle product



6.4 Dimension figure of cabinet door opening: SB1-“A”/G3A-1250, dimension drawing of wiring terminal

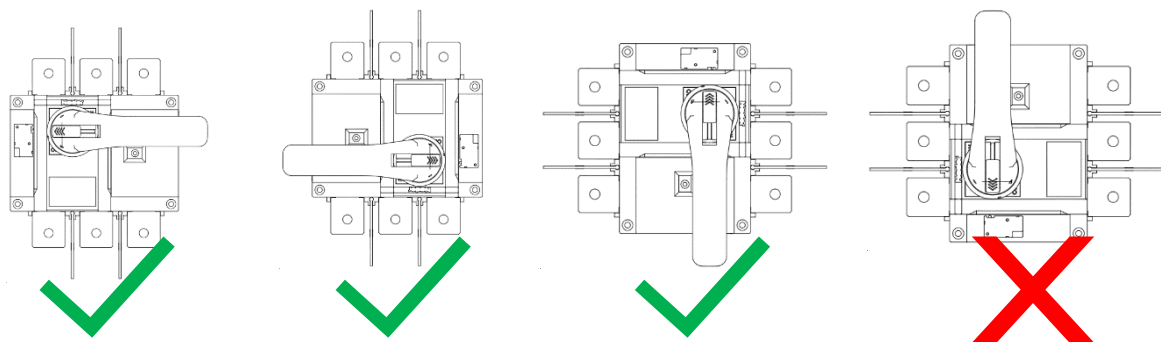


7. Installation mode

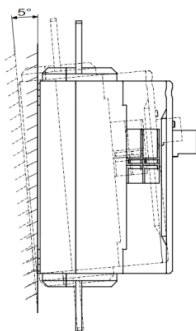
Installation method: Isolating switch screws and handle cabinet door installation;

Installation location: Vertical installation and horizontal installation;

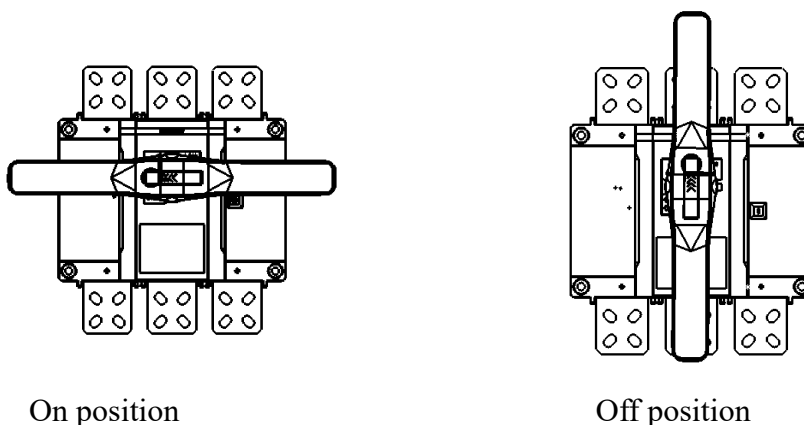
In case of vertical installation, the contact inspection window shall not position upward, as the 4th method shown in the figure below.



The vertical panels installed shall have the inclination no more than 5° with the direction as shown in the figure below;



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

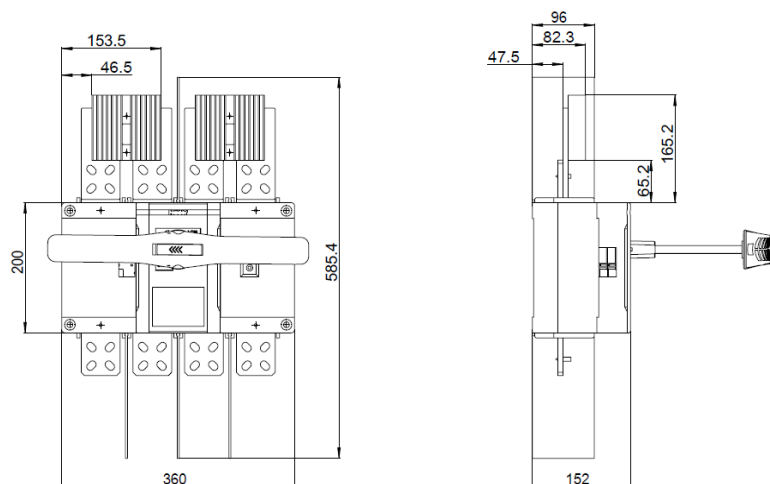


8. List of Accessories and Installation

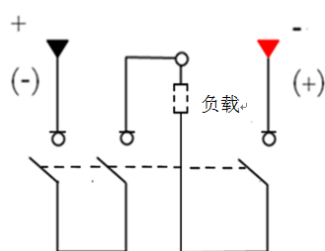
8.1 Optional accessories list

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

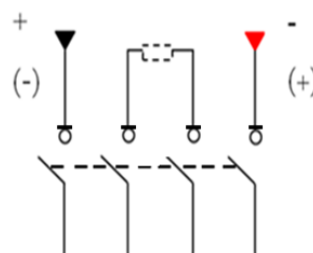
8.2 Appearance and wiring mode of the NDG3A-1000/1250 short busbar product



8.3 Wiring diagram



Three-pole string connection mode



Four-pole string connection mode

9. Packaging and Storage

9.1 Disconnecting switch packaging

SN	Specification	Number of poles	Quantity
1	NDG3A-1000 NDG3A-1250	3P/4P	1 unit/box

9.2 Accessories packaging (maximum packaging quantity)

Name	Quantity
Handle	2 sets/box, 4 boxes/carton
Auxiliary contact	16 sets/box, 40 boxes/carton
Short bus bar	2 sets/box, 2 boxes/carton

9.3 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°C and +85°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.

10. Environmental Compliance

Environmental requirements comply with RoHS 2.0 directives.

11. Precautions

- 1) A user must be responsible for addressing a product issue that occurs because the user disassembles the product without approval;
- 2) Do not touch the non-insulated exposed parts of the disconnecting switch when it is connected to a power supply;
- 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.