

Shanghai Liangxin Electrical Co., Ltd.

NDG3V-250~800 Switch-disconnectors

Product Specification

(IPD-ENG-DEV-T22 A1 2016-09-23)

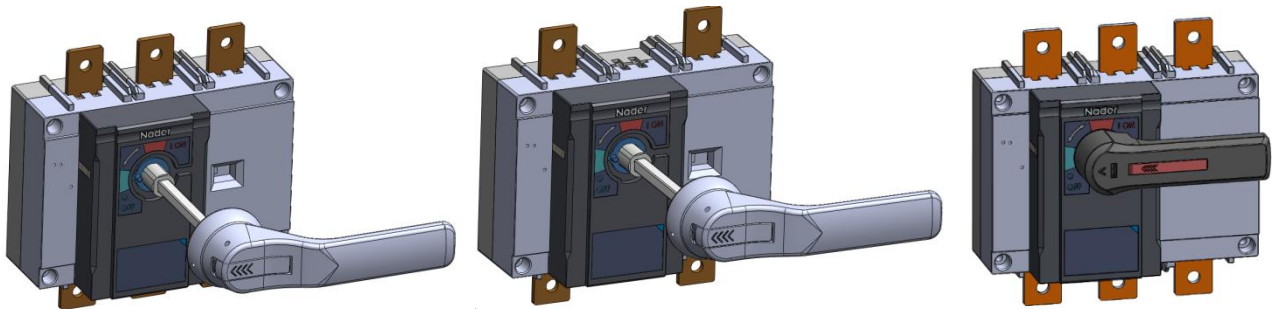
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Approved	胡琪	Date	2023.10.08

Revision information					
Version	Revised contents and reasons	Date	Prepared	Reviewed	Approved
0	New file	20200320	Zheng Lei	Jiang Zhaoyong	Wang Jili
1	Errata	20200904	Zheng Lei	Yang Zikun	Wang Jili
2	Add content	2020.2.24	Zhao zhenxing	Yang Zikun	Wang Jili
3	Increase minimum load	20231008	Liu Dong Hui	Fan Cong	Hu Qi

1、Application

The NDG3V-250~800 series switch-disconnectors are applicable to electric systems with a rated voltage up to DC 1500V and a rated current up to 800A. It can be used for infrequent close and open, it provides isolation and breaking off circuit. It is suitable for photovoltaic、energy storage industries.

2、Product Pictures



3、Model and implication

3.1 Product model implication

Model and Description						
ND	G	3V	-	□	/	□ □ □
1	2	3		4		5 6 7
SN	Name		Code			
1	Enterprise code		ND			
2	Product code		G:switch-disconnectors			
3	Design code		3V			
4	Rated current		250-250A; 350-350A; 400-400A; 500-500A; 630-630A; 800-800A			
5	Number of Poles		2: Two poles 3: Three poles			
6	Current type		Z: DC photovoltaic product			
7	Handle type		K: Inside-cabinet handle P: Outside-cabinet handle			

3.2 Handle model implication

Model and Description		
<u>SB</u> <u>1</u> - <u>□</u> / <u>□</u> 1 2 3 4		
SN	Name	Code
1	Function code	Handle
2	Design code	1
3	Shaft code	200: 200mm 400: 400mm
4	Applicable switch model	G3-800: Apply to NDG3V-250~800 G3A-800: Apply to NDG3V-250~800

Note: Protection level of handle is IP65

3.3 Auxiliary contact model implication

Model and Description		
<u>F</u> <u>1</u> - <u>11</u> <u>□</u> / <u>G3-800</u> 1 2 3 4 5		
SN	Name	Code
1	Function code	Auxiliary contact
2	Design code	1
3	Contacts number	11: 1NO+1NC
4	Auxiliary switch mounting number	A: 1 pc for each product B: 2 pcs for each product
5	Applicable switch model	G3-800: Apply to NDG3V-250~800

3.4 Bridging links model implication

Model and Description		
<u>MX</u> <u>1</u> / <u>□</u> 1 2 3		
SN	Name	Code
1	Function code	Bridging links
2	Design code	1
3	Applicable switch model	G3V-400: Apply to NDG3V-250,350,400 G3-800: Apply to NDG3V-500,630,800

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4、Main technical parameters

4.1 Main technical parameters switch-disconnectors

Switch-Disconnecter			NDG3V-250/350/400			NDG3V-500/630/800		
Thermal current I _{th} (A)			400			800		
Number of Poles			2、3					
Rated Insulation voltage U _i (V)			DC1500					
Rated impulse withstand voltage U _{imp} (kV)			12					
Rated short-time withstand current I _{cw} (1s.kA)			DC:10					
Rated short-circuit making capability I _{cm} (kA)			DC:17					
Rated Current I _n (A)(at +40℃)			250	350	400	500	630	800
Rated operational current I _e (A)	DC-21B DC-PV2	DC1000V(2P)	250	350	400	500	630	800
		DC1500V(3P)	250	350	400	500	630	800
life(times)		Mechanical life(times)	5000					
		Electrical life(times)	200					
Certificated			CCC、TUV、CE					
Operation torque(N.m)			18					
Installation method			M6 Screw installation					
Use category			DC-21B; DC-PV2					
L×W×H (mm)		2P	240×230×131.5					
		3P	240×230×131.5					
Minimum copper cable cross-section area (mm ²)			120 (1 root)	185 (1 root)	240 (1 root)	150 (1 root)	185 (1 root))	240 (1 root))
Terminal screw specifications(mm)			M10×35					
Tightening torque of copper cable connection(N.m)			10-30					
Weight (Kg)		2P	4.4					4.6
		3P	4.8					5.1



Applicable standards :GB/T 14048.1; GB/T 14048.3; IEC 60947-1; IEC 60947-3

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4.2 Main parameters of auxiliary switch

➤ Electrical parameters

Rated voltage	AC250V	DC250V	DC125V
Rated current	16A	0.3A	0.6 A

- Isolation voltage: AC1000V
- Thermal current I_{th}: 16A
- Frequency: 50/60Hz
- Minimum Load: DC30V 0.1A
- Category: AC-15 ,DC-13
- Protection: IP20
- Electrical life: 20000 times
- Applicable standards : GB/T 14048.5
- Environmental protection requirements comply with RoHS2.0 directive.

5、Working conditions

- 1) The ambient air temperature for normal operation ranges in -35℃~+70℃; when the ambient air temperature is above +70℃, the user should negotiate with the manufacturer.

工作电流		环温 (℃)		
型号	额定电流 (A)	75	80	85
NDG3V-250	250	1.0I _n	1.0I _n	1.0I _n
NDG3V-350	350	1.0I _n	1.0I _n	1.0I _n
NDG3V-400	400	1.0I _n	0.92I _n	0.87I _n
NDG3V-500	500	1.0I _n	0.90I _n	0.85I _n
NDG3V-630	630	1.0I _n	1.0I _n	0.92I _n
NDG3V-800	800	1.0I _n	0.90I _n	0.85I _n

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

工作电流		海拔		
型号	额定电流 (A)	2000m	3000m	4000m
NDG3V-250	250	1.0I _n	1.0I _n	1.0I _n
NDG3V-350	350	1.0I _n	1.0I _n	1.0I _n

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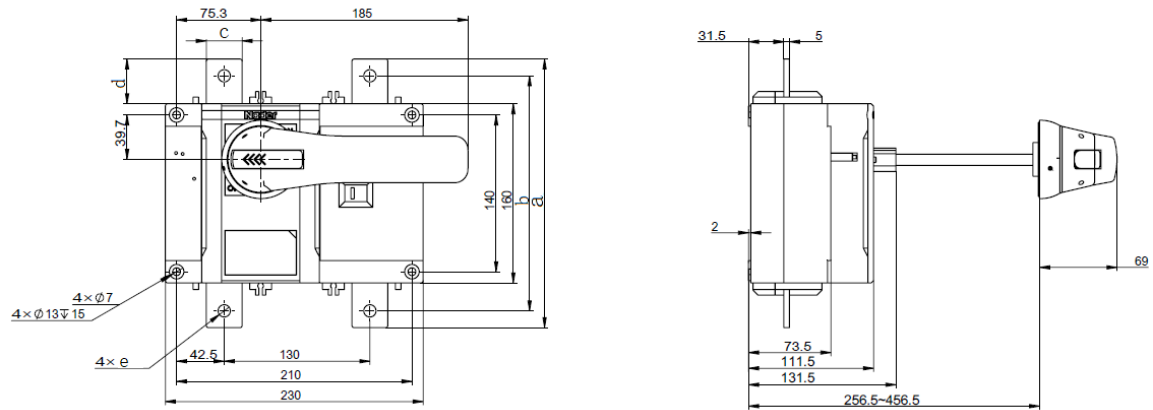
NDG3V-400	400	1.0In	1.0In	0.92In
NDG3V-500	500	1.0In	1.0In	0.85In
NDG3V-630	630	1.0In	1.0In	1.0In
NDG3V-800	800	1.0In	1.0In	0.92In

海拔 (m)		2000	3000	4000
额定绝缘电压		1500V	1500V	1500V
冲击耐受电压		12kV	12kV	8kV
额定工作电压	2P	1000V	1000V	1000V
	3P	1500V	1500V	1500V
工频耐压		3820V	3820V	3820V

- 3) Storage temperature: -50°C ~ +85°C.
- 4) Relative humidity: The relative humidity of the air does not exceed 50%°C at the maximum temperature of +40°C. The higher relative humidity may be permitted at lower temperature.
- 5) Service place should be without explosive media, gas and dust which are corrosive and conductive, the product should be mounted free from rain and snow.
- 6) Protection degree: IP20; External handle: IP65.
- 7) Pollution degree: 3.
- 8) Installation type: III 和 IV .

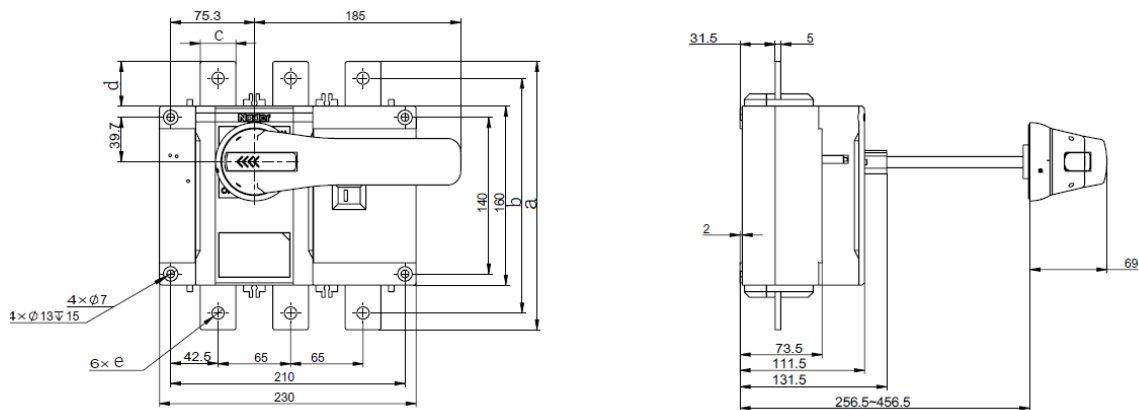
6、Outline and installation dimensions

6.1 Two-pole product(with Outside-cabinet handle)



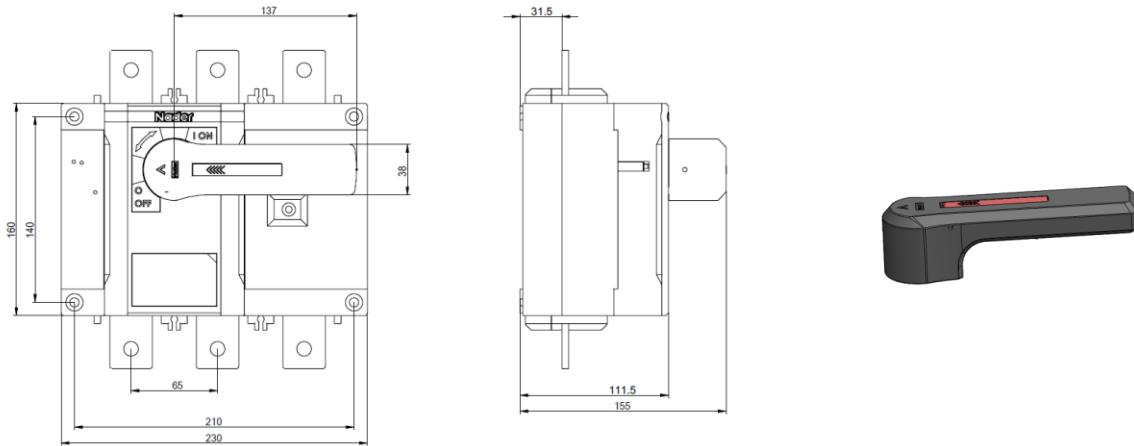
Shell frame	a	b	c	d	e
NDG3V-250~500	240	210	32	40	Φ11
NDG3V-630~800	260	220	45	50	Φ12.5

6.2 Three-pole product(with Outside-cabinet handle)



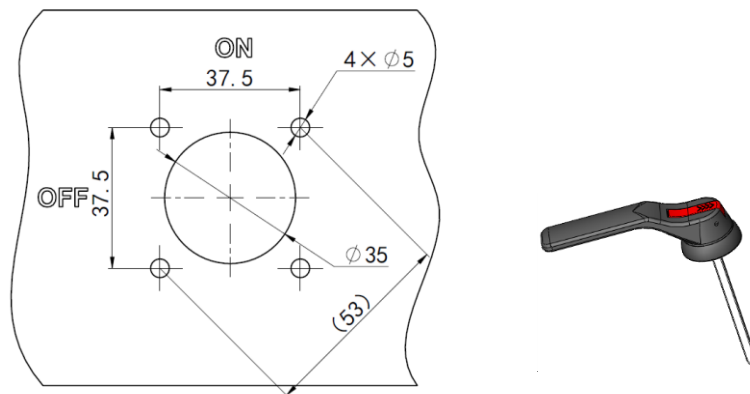
Shell frame	a	b	c	d	e
NDG3V-250~500	240	210	32	40	Φ11
NDG3V-630~800	260	220	45	50	Φ12.5

6.3 Appearance and Installation Size of the Product Inside of the Cabinet



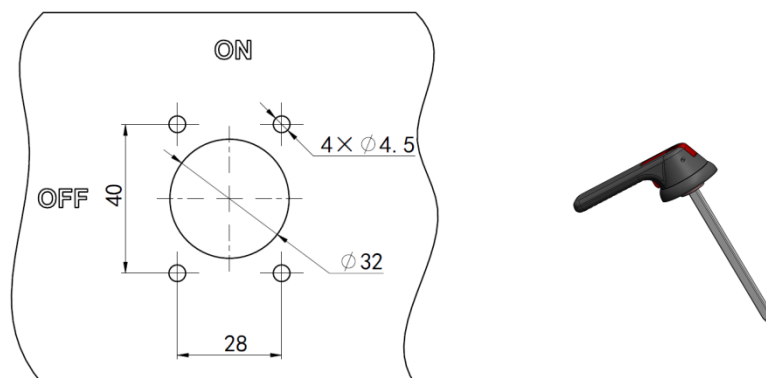
6.4 Dimension drawing of opening of handle cabinet door outside cabinet:

SB1- “A” /G3-800



6.5 Dimension drawing of opening of handle cabinet door outside cabinet;

SB1- “A” /G3A-800



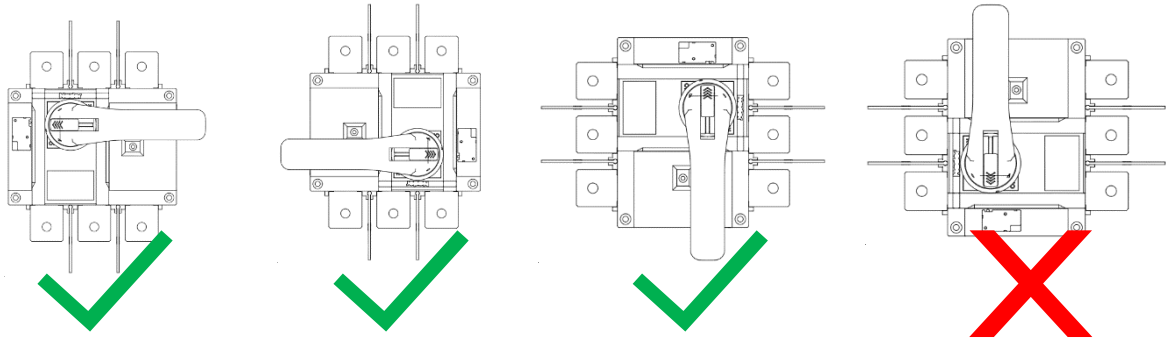
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7、Installation Method

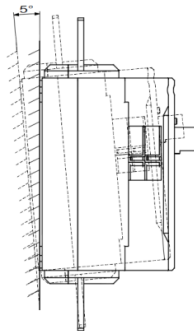
Installation method: screw for switch, panel drilling for handle;

Installation position: vertical installation or horizontal installation.

AS the 4th follow diagram show, when vertical installation, inspection window of the contact should not be upward.

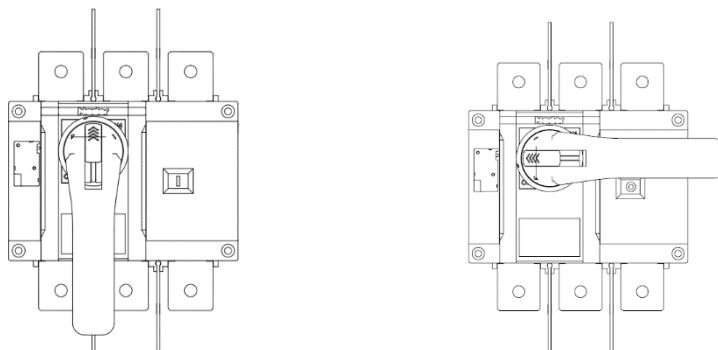


As the diagram show, the product should be mounted within 5° of the vertical mounting plane in case the characters of the product are affected;



The product should be mounted within 5° of the vertical mounting plane in case the characters of the product are affected

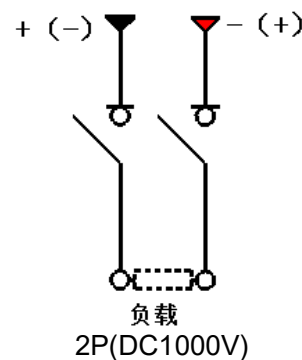
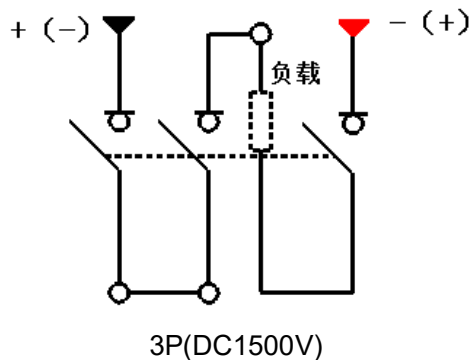
Status position : as follow diagram show, there are two position, switch on position “I/ON” and switch off position “O/OFF” .



Switch on

Switch off

8、Wiring Mode (Wiring Diagrams)



9、Packaging and storage

9.1 Switch product packaging

No.	Model	Poles	Pcs
1	NDG3V- 250/350/400/500/630/800	2P/3P	1pc/box

9.2 Accessories packaging (Maximum packing capacity)

Name	Number
Handle	2 pcs /box, 12 boxes/carton
Auxiliary contact	16 pcs/box, 40 boxes/carton
Bridging links	2 pcs/box, 4 boxes/carton

9.3 Storage

The product should be transited and deposited free from rain and snow. The product should be stored in the warehouse where there is ventilation. The relative humidity there should not exceed 80%, and the ambient temperature there is between -40°C and +85°C. In addition, there should not be acidic, alkaline and corrosive gas in the air. The product should not be deposited more than 3 years in the above mentioned conditions since the producing date.

10、Environment

Environmental protection requirements comply with RoHS2.0 directive.

11、Notices

- 1) Any quality problem due to disassembly without permission will be the liability of the user;
- 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) The connecting wires should be fastened on the distribution cabinet frame. The switch should not bear the weight of the conductor. Before fixing the conductor, the plane of busbar or cable terminal should be parallel to the plane of switch terminal. After connecting wires and switch terminals with bolts, the switch should not bear various mechanical stresses.