

Shanghai Liangxin Electrical Co., Ltd.
NDG3V-250~800 Switch-disconnectors

Product Specification

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

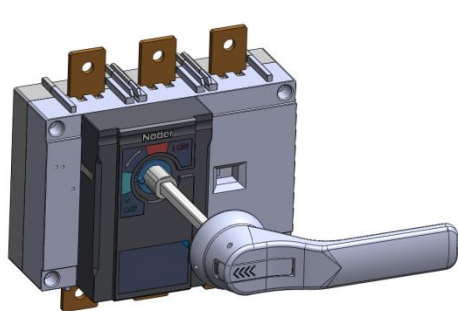
Prepared	赵振兴	Date	2021-02-24
Reviewed	杨子坤	Date	2021-02-24
Countersign	付传涛	Date	2021-02-25
Approved	王继理	Date	2021-03-02

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

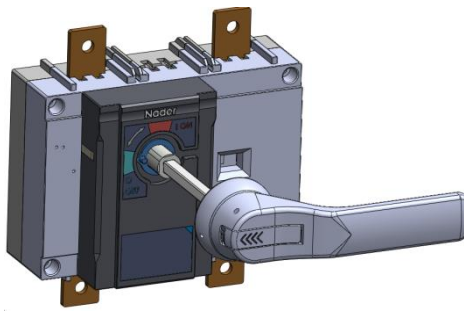
1、Application

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.

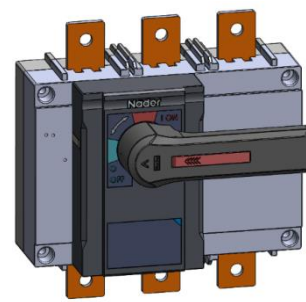
2、Product Pictures



Three poles
(with Outside-cabinet handle)



Two poles
(with Outside-cabinet handle)



Three poles
(with Inside-cabinet handle)

3、Model and implication

3.1 Product model implication

Model and Description		
<u>ND</u> <u>G</u> <u>3V</u> - <u> </u> / <u> </u> <u> </u> <u> </u>		
1 2 3 4 5 6 7		
SN	Name	Code
1	Enterprise code	ND:"Nader" brand
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

4、Main technical parameters

4.1 Main technical parameters switch-disconnectors

Switch-Disconnecter			NDG3V-250/350/400			NDG3V-500/630/800		
Thermal current Ith(A)			400			800		
Number of Poles			2、3					
Rated Insulation voltage Ui(V)			DC1500					
Rated impulse withstand voltage Uimp (kV)			12					
Rated short-time withstand current Icw(1s.kA)			DC:10					
Rated short-circuit making capability Icm (kA)			DC:17					
Rated Current In(A)(at +40℃)			250	350	400	500	630	800
Rated operational current Ie(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 (mm²)			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

4.2 Main parameters of auxiliary switch

➤ Electrical parameters

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

➤ Isolation voltage: AC1000V

➤ Thermal current I_{th}: 16A

➤ Frequency: 50/60Hz

➤ 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) Altitude≤4000m.

Working current		Altitude		
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	1.0I _n	0.92I _n
NDG3V-500	500	1.0I _n	1.0I _n	0.85I _n
NDG3V-630	630	1.0I _n	1.0I _n	1.0I _n
NDG3V-800	800	1.0I _n	1.0I _n	0.92I _n

Altitude (m)		2000	3000	4000
Rated insulation voltage		1500V	1500V	1500V
Shock withstand voltage		12kV	12kV	8kV
Rated operating voltage	2P	1000V	1000V	1000V
	3P	1500V	1500V	1500V
Power frequency withstand voltage		3820V	3820V	3820V

2)Ambient temperature: -35℃ ~ +70℃ .

Working current		Ambient temperature (℃)		
model	Ratedcurrent (A)	75	80	85
NDG3V-250	250	1.0In	1.0In	1.0In
NDG3V-350	350	1.0In	1.0In	1.0In
NDG3V-400	400	1.0In	0.92In	0.87In
NDG3V-500	500	1.0In	0.90In	0.85In
NDG3V-630	630	1.0In	1.0In	0.92In
NDG3V-800	800	1.0In	0.90In	0.85In

3)Storage temperature: -50℃ ~ +85℃.

4)Relative humidity: The relative humidity of the air does not exceed 50%℃ at the maximum temperature of +40℃. 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.

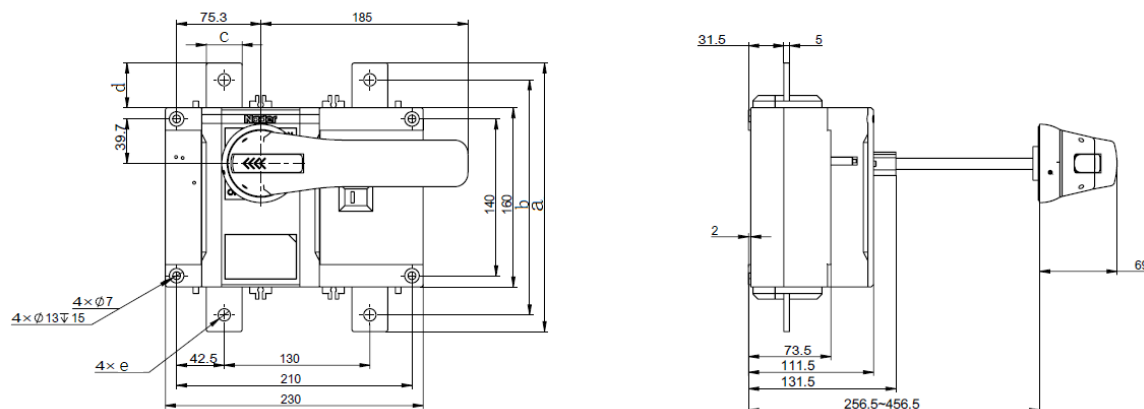
6)Protection degree: IP20; External handle: IP65.

7)Pollution degree: 3.

8)Installation type: III和IV.

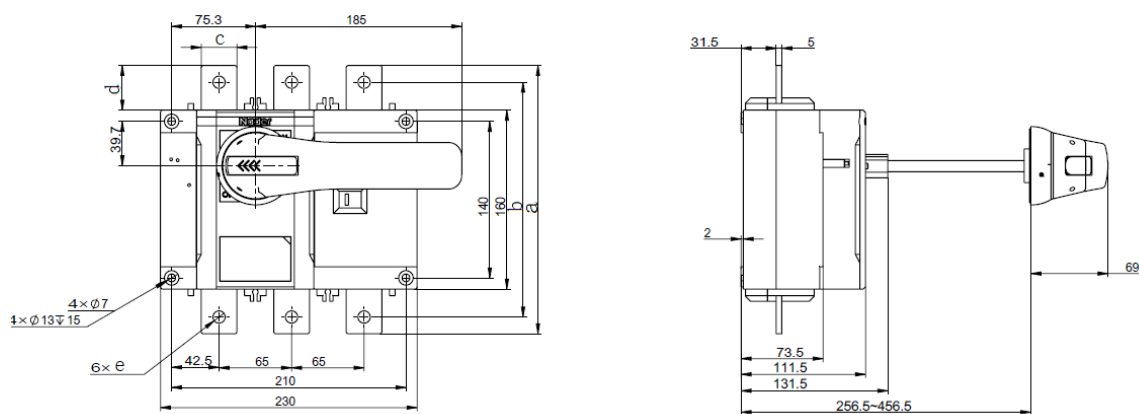
6、Outline and installation dimensions

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



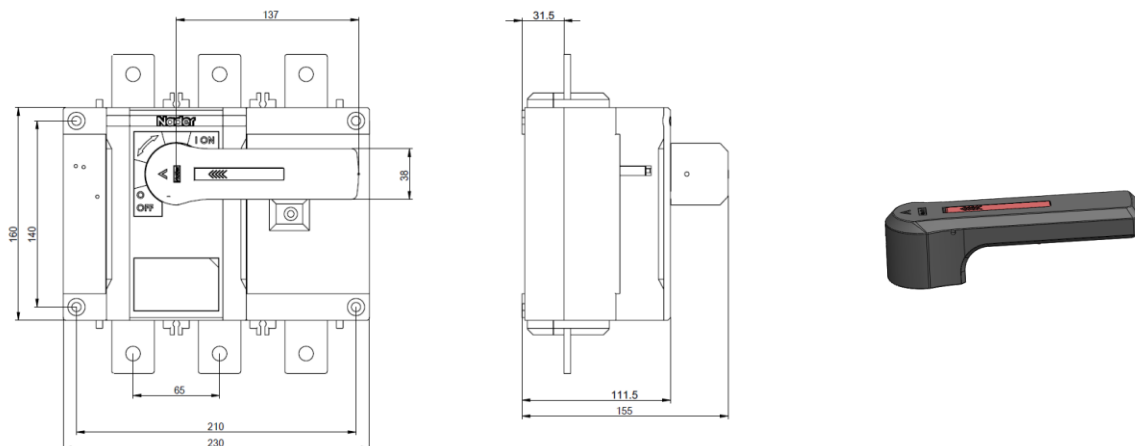
Shell frame	a	b	c	d	e
NDG3V-250~500	240	210	32	40	Φ11
NDG3V-630~800	260	220	45	50	Φ12.5

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



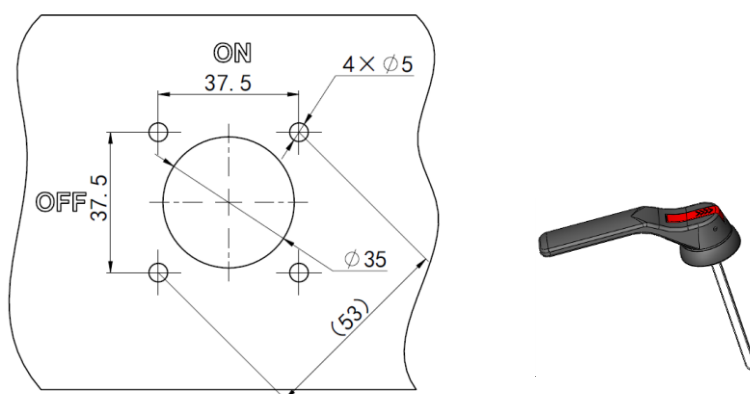
Shell frame	a	b	c	d	e
NDG3V-250~500	240	210	32	40	Φ11
NDG3V-630~800	260	220	45	50	Φ12.5

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



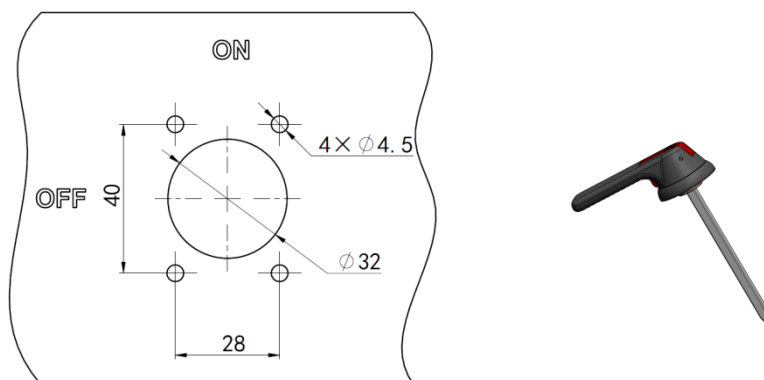
6.4 Dimension drawing of opening of handle cabinet door outside cabinet:

SB1- “A” /G3-800



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

SB1- “A” /G3A-800

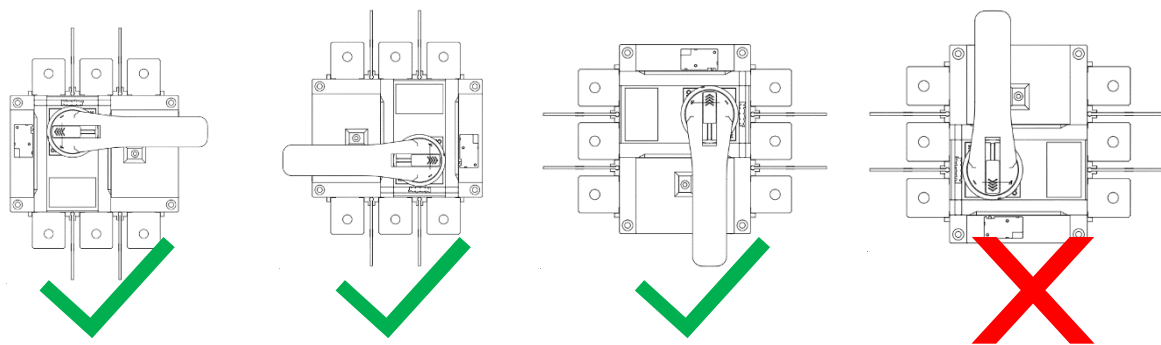


7、Installation Method

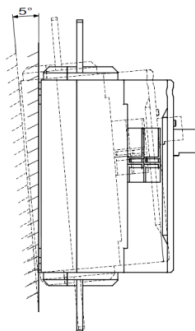
Installation method: screw for switch, panel drilling for handle;

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.

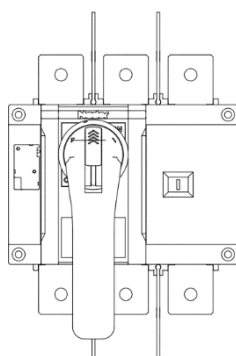


As the diagram show, the product should be mounted within 5° of the vertical mounting plane in case the characters of the product are affected;

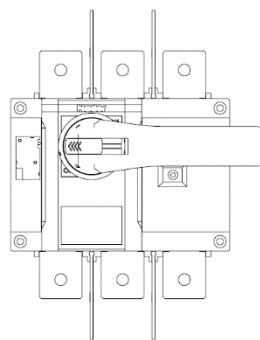


The product should be mounted within 5° of the vertical mounting plane in case the characters of the product are affected

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

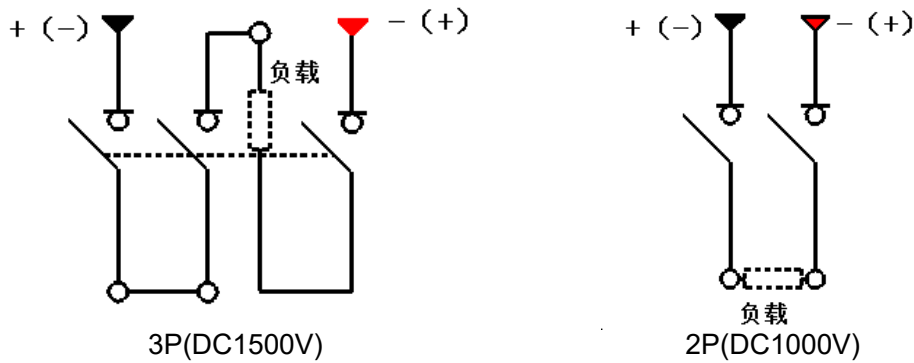


Switch on



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.