Shanghai Liangxin Electrical Co., Ltd.

NDG3V-50(H) Switch-disconnectors

Product Specification

（IPD-ENG-DEV-T22 A1 2016-09-23）

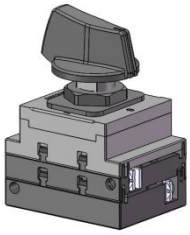
Prepared	郑蕾	Date	2021-1-13
Reviewed	杨子坤	Date	2021-1-13
Countersign	付传涛	Date	2021-1-14
Approved	王继理	Date	2021-1-15

Revision information					
Version	Revised contents and reasons	Date	Prepared	Reviewed	Approved
0	New file	20190319	Zhou Wenguang	Shi Jian	Shi Wei
1	Add PV2 parameter	20200521	Zheng Lei	Jiang Zhaoyong	Wang Jili
2	Parameters changed, new model handle added, etc	20201201	Zheng Lei	Yang Zikun	Wang Jili
3	Outline and installation dimensions changed	20200121	Zheng Lei	Yang Zikun	Wang Jili

1、Application

The NDG3V-50(H) series switch-disconnectors are applicable to electric systems with a rated voltage up to DC 1500V or AC 690V and a rated current up to 63A. It can be used for infrequent close and open, it provides isolation and breaking off circuit, it also provides safety isolation for any low voltage circuit of photovoltaic applications.

2、Product Pictures



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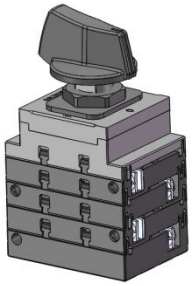

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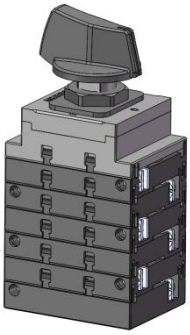

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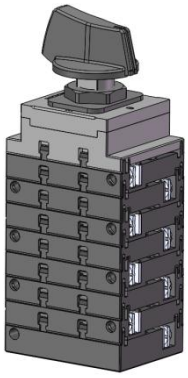

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Note: the picture is for reference only, and the appearance of the product is subject to the real object.

3、Model and implication

Model and Description		
ND G 3 V— 50 H / □ / □ / □ / □ / □ 1 2 3 4 5 6 7 8 9 10 11		
SN	Name	Code
1	Enterprise code	ND:"Nader" brand
2	Product code	G:switch-disconnectors
3	Design code	3
4	Trade code	V:Wide voltage
5	Frame code	50
6	Customer code	H:High-voltage type Nothing:Connetional products
7	Mechanical layer	2, 3, 4, 6, 8
8	Wiring mode	1: Serial cabling across two layers 4: AC connection 5: Two positive share one negative 6: Single layer wiring
9	Handle form	01-Opening position lock handle 02-Conventional handle
10	Installation mode	M: on cabinet door
11	Product No.	The number corresponds to the product parameters; for details, see the Table of Technical Parameters

4、Main technical parameters

<table>
<tr><th>Parameter name</th><th colspan="3">Category/unit</th><th colspan="8">Description of the specific parameters</th></tr>
<tr><td>Frame current</td><td colspan="3">A</td><td colspan="8">63</td></tr>
<tr><td>Conventional heating current</td><td colspan="3">A</td><td colspan="8">63</td></tr>
<tr><td>Isolation voltage</td><td colspan="3">V</td><td colspan="8">1500</td></tr>
<tr><td>Rated impulse withstand voltage</td><td colspan="3">kV</td><td colspan="8">8</td></tr>
<tr><td rowspan="29">NDG3V-50 Rated current (A)</td><td colspan="2">DC Voltage(V)</td><td>Product No.</td><td>500</td><td>600</td><td>700</td><td>800</td><td>1000</td><td>1100</td><td>1250</td></tr>
<tr><td rowspan="14">Serial cabling across two layers (2/4/6/8 Layers) / Two positive share one negative (3/6 Layers)</td><td rowspan="4">DC-21B/PV1</td><td>1</td><td>50</td><td>40</td><td>32</td><td>26</td><td>18</td><td>13</td><td></td></tr>
<tr><td>2</td><td></td><td>50</td><td>40</td><td>32</td><td>26</td><td>20</td><td>13</td></tr>
<tr><td>3</td><td>63</td><td>50</td><td>45</td><td>40</td><td>30</td><td>26</td><td></td></tr>
<tr><td>4</td><td></td><td>63</td><td>50</td><td>45</td><td>35</td><td>30</td><td>20</td></tr>
<tr><td rowspan="10">DC-21B/PV2</td><td>5</td><td>35</td><td>26</td><td>22</td><td>18</td><td>13</td><td>10</td><td></td></tr>
<tr><td>6</td><td></td><td>30</td><td>26</td><td>20</td><td>15</td><td>12</td><td>8</td></tr>
<tr><td>7</td><td>40</td><td>32</td><td>30</td><td>26</td><td>20</td><td>16</td><td></td></tr>
<tr><td>8</td><td></td><td>40</td><td>35</td><td>32</td><td>26</td><td>20</td><td>16</td></tr>
<tr><td>9</td><td>50</td><td>45</td><td>40</td><td>36</td><td>30</td><td>26</td><td></td></tr>
<tr><td>10</td><td></td><td>50</td><td>45</td><td>40</td><td>35</td><td>30</td><td>22</td></tr>
<tr><td>11</td><td>63</td><td>55</td><td>50</td><td>40</td><td>35</td><td>30</td><td></td></tr>
<tr><td>12</td><td></td><td>63</td><td>55</td><td>45</td><td>40</td><td>36</td><td>30</td></tr>
<tr><td>13</td><td></td><td></td><td>63</td><td>50</td><td>45</td><td>40</td><td>36</td></tr>
<tr><td>14</td><td></td><td></td><td></td><td>63</td><td>50</td><td>50</td><td>36</td></tr>
<tr><td>DC-21B/PV1</td><td rowspan="2">15</td><td></td><td>50</td><td></td><td>40</td><td>30</td><td></td><td>20</td></tr>
<tr><td>DC-PV2</td><td></td><td>30</td><td></td><td>20</td><td>12.5</td><td></td><td>7.5</td></tr>
<tr><td>DC-21B/PV1</td><td rowspan="2">16</td><td></td><td>50</td><td></td><td>40</td><td>30</td><td></td><td>20</td></tr>
<tr><td>DC-PV2</td><td></td><td>40</td><td></td><td>36</td><td>25</td><td></td><td>16</td></tr>
<tr><td>Single layer wiring</td><td>DC-21B/PV1/PV2</td><td>20</td><td>32</td><td></td><td></td><td>20</td><td>15</td><td>13</td><td></td></tr>
<tr><td colspan="2">AC Voltage(V)</td><td>Product No.</td><td colspan="2">220/230/240</td><td colspan="2">380/400/415</td><td colspan="3">690</td></tr>
<tr><td rowspan="3">AC connection (2 Layers)</td><td rowspan="10">AC-22B</td><td>1</td><td colspan="2">32</td><td colspan="2"></td><td colspan="3"></td></tr>
<tr><td>2</td><td colspan="2">40</td><td colspan="2"></td><td colspan="3"></td></tr>
<tr><td>3</td><td colspan="2">50</td><td colspan="2"></td><td colspan="3"></td></tr>
<tr><td rowspan="7">AC connection (3/4 Layers)</td><td>4</td><td colspan="2"></td><td colspan="2">32</td><td colspan="3"></td></tr>
<tr><td>5</td><td colspan="2"></td><td colspan="2">40</td><td colspan="3"></td></tr>
<tr><td>6</td><td colspan="2"></td><td colspan="2">50</td><td colspan="3"></td></tr>
<tr><td>7</td><td colspan="2"></td><td colspan="2"></td><td colspan="3">32</td></tr>
<tr><td>8</td><td colspan="2"></td><td colspan="2"></td><td colspan="3">40</td></tr>
<tr><td>9</td><td colspan="2"></td><td colspan="2"></td><td colspan="3">50</td></tr>
<tr><td>10</td><td colspan="2"></td><td colspan="2"></td><td colspan="3">63</td></tr>
</table>

NDG3V-50H Rated current (A)	DC Voltage(V)		Product No.	800	1000	1200	1250	1300	1500
	Serial cabling across two layers (2/4/6/8 Layers) / Two positive share one negative (3/6 Layers)	DC-21B/PV1/PV2	1	18	15		12		10
			2	25	20		16		13
			3	32	25		20		16
			4	38	30		24		20
			5	45	35		28		23
			6	50	40		32		26
		DC-21B/PV1	9	63	50	35			20
		DC-PV2		50	35	26			13
		DC-21B/PV1	10	63	50	40			20
		DC-PV2		55	50	40			20
Rated short-time withstand current	kA • 1s			0.7					
Rated short circuit making capacity	kA			1.4					
Mechanical life	Times			9700					
Electrical life	Times			300					
Operating torque	N.m			1.5~2.2					
Fixed moment of the complete appliance	N.m			2.0~2.5					
Connection moment	N.m			1.5~1.7					
Fixed moment of handle	N.m			0.6~0.75					
Connection area (recommended)	mm2			To be implemented according to Table 9 of GB/T 14048.1					
Installation mode	On cabinet door								
Protection class	Complete appliance: IP20;Handle: IP66								

- Applicable standards :GB/T 14048.1; GB/T 14048.3; IEC 60947-1; IEC 60947-3
- Frequency: 50 / 60Hz
- Certificated: CCC、CE、TUV、SAA

5、Working conditions

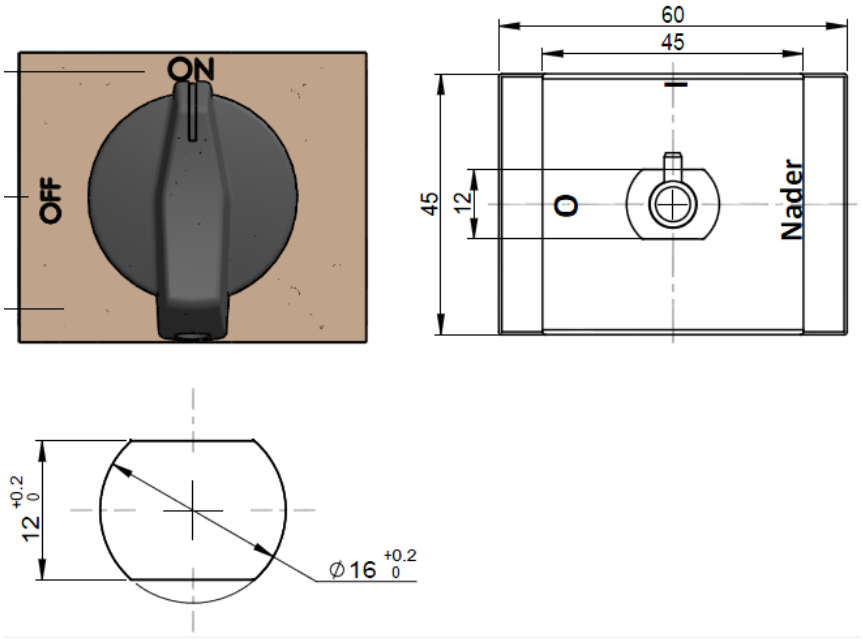
1) The ambient air temperature for normal operation ranges in -40℃~+75℃; when the ambient air temperature is above +75℃, or below -40℃, the user should negotiate with the manufacturer.
2) Normal installation altitude shall not exceed 4000m, Refer to the following table for capacity reduction when using higher than 4000m:

Altitude derating coefficient			
Altitude /m	4000	4500	5000
Correction factor of working current	1.00	0.94	0.90
Correction factor of working voltage	1.00	0.90	0.80

3) The relative humidity at an ambient temperature of +40℃ should not exceed 50%. A higher relative humidity is allowed at a lower temperature. For example, it can be 90% at 20℃. 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) The installation types III and IV are applicable to the product.

6、Installation Method

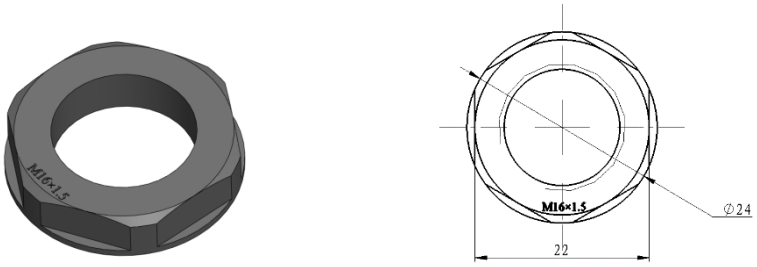
6.1 Installation method: Install it on the cabinet door by using the handle.



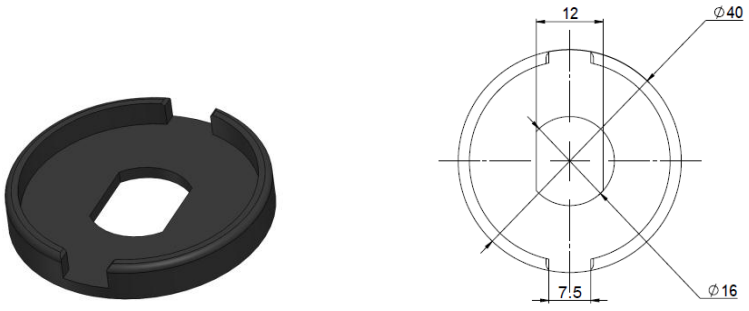
Opening size on door

6.2 Positions: The product has two switch positions, which are the I/ON position and O/OFF position as shown in the above figure.

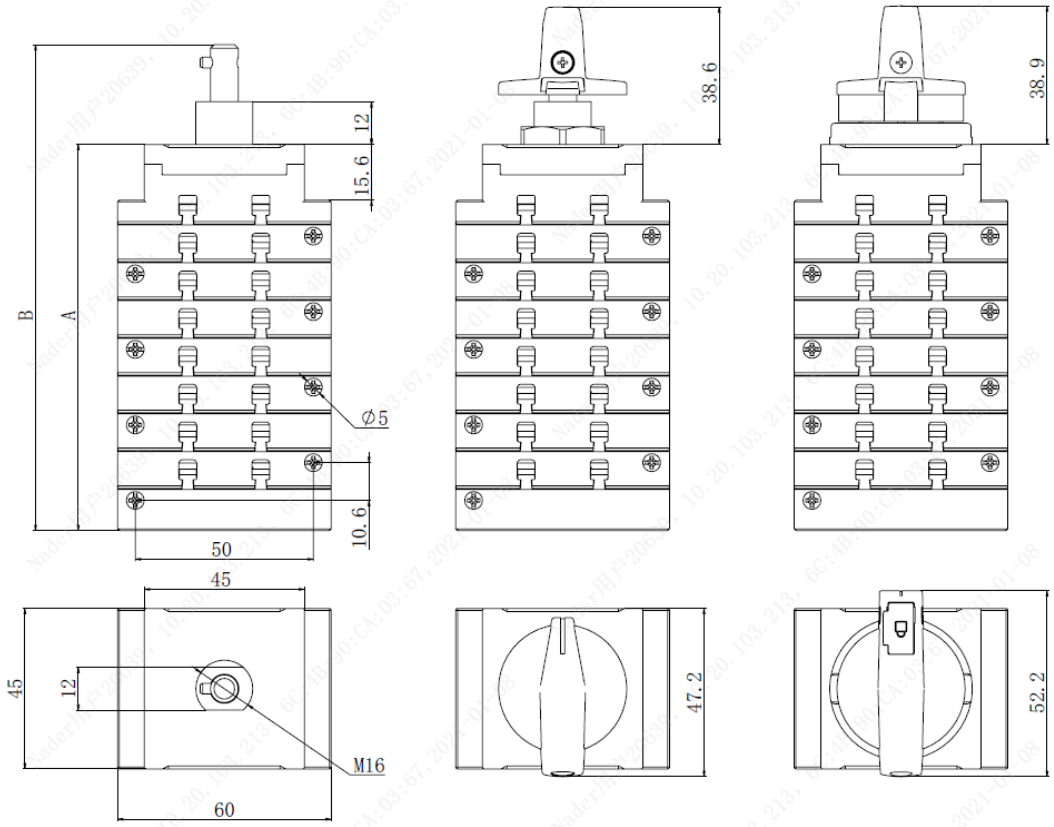
6.3 Fixing nut:



6.4 Handle stop of opening position lock handle:



7、Outline and installation dimensions



Size of switch body (excluding handle)

Conventional handle siz

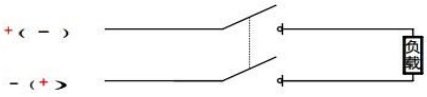
Opening position lock handle size

NDG3V-50(H) outline and installation dimensions

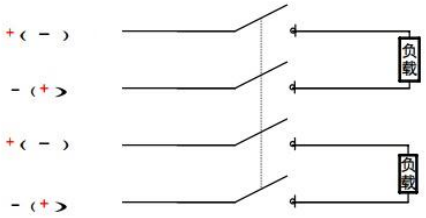
	A	B	weight(g)
Switch body of 2P	44.6	72.6	137
Switch body of 3P	65.6	93.6	191
Switch body of 4P	65.6	93.6	207
Switch body of 6P	86.6	114.6	273
Switch body of 8P	107.6	135.6	342
Conventional handle	/	/	13
Opening position lock handle	/	/	21

8、Wiring Mode (Wiring Diagrams)

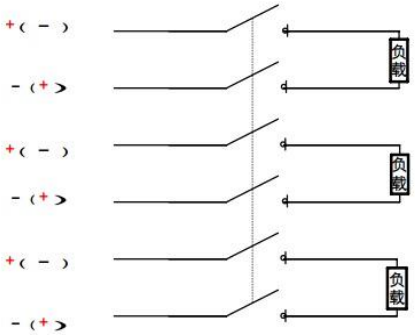
8.1 Series Connection Diagram Cabling Across for Two Layers of the Product with a DC Power Supply



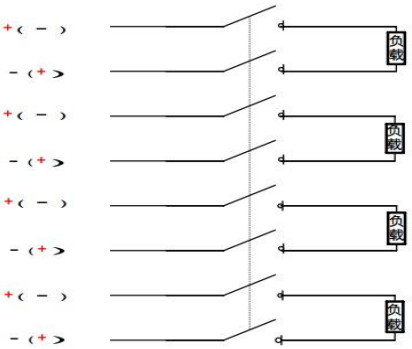
Cabling across two layers



Cabling across four layers

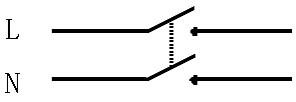


Cabling across six layers

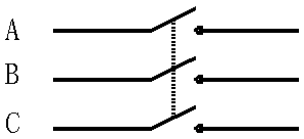


Cabling across eight layers

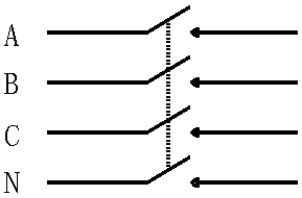
8.2 Cabling for the AC Power Supply



Cabling across two layers

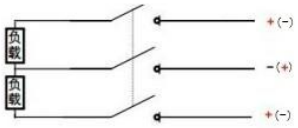


Cabling across three layers

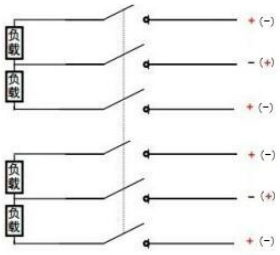


Cabling across four layers

8.3 Series Connection Diagram Cabling Across for Two positive share one negative of the Product with a DC Power Supply

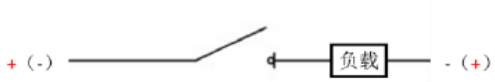


Cabling across three layers



Cabling across six layers

8.4 Diagram Cabling Across for single layer of the Product with a DC Power Supply



9、Packaging and storage

9.1 Switch product packaging

SN	Model	Layers	Pcs
1	NDG3V(H)-50	2,3,4	60pcs/box
2	NDG3V(H)-50/6	6	30pcs/box
3	NDG3V(H)-50/8	8	25pcs/box

9.2 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℃ and +85℃. 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 RoHS 2.0 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.