

Shanghai Liangxin Electrical Co., Ltd.
NDG3V-50(H) Switch-disconnectors

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

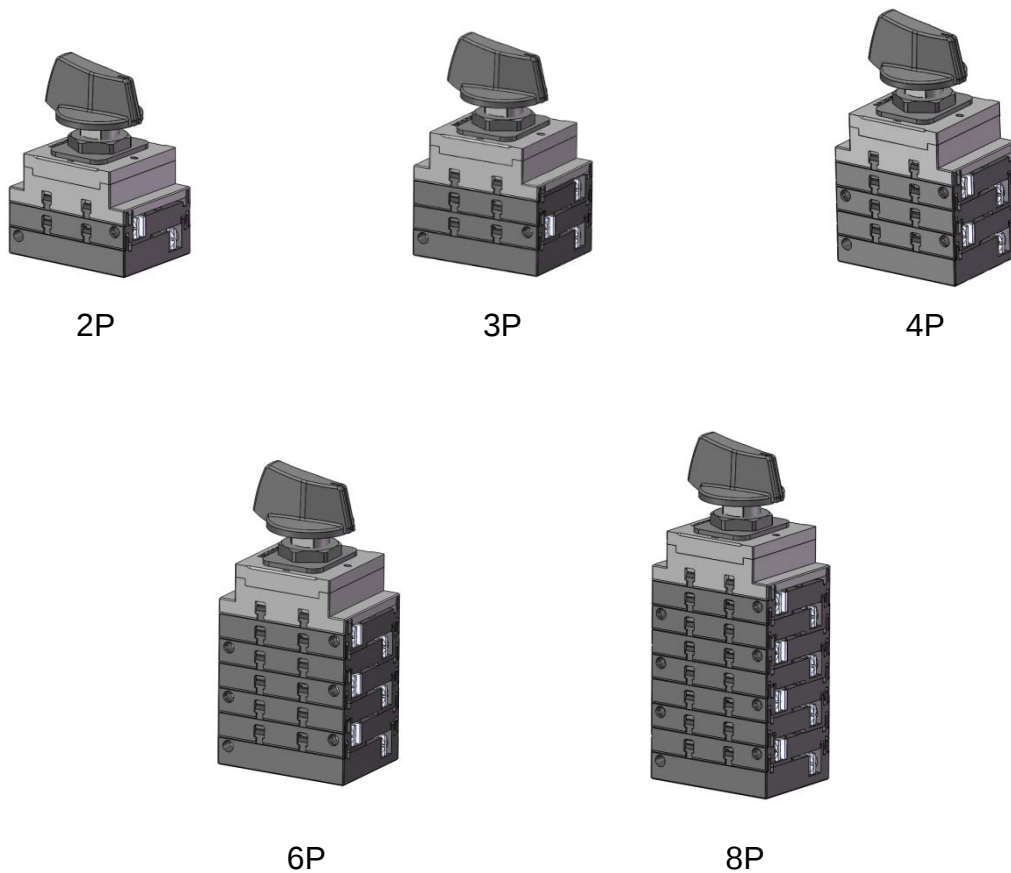
Prepared	郑蕾	Date	2023-01-05
Reviewed	刘东辉	Date	2023-01-05
Countersign	郭小明	Date	2023-01-05
Approved	胡琪	Date	2023-01-05

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
4	Change the dimension and parameter	20211207	Chen Zhenzhen	Zheng Lei	Wang Jili
5	Dimension drawing change	20210108	Zheng Lei	Yang Zikun	Wang Jili
6	Modify the size information, AC connect the No. 7 parameter, modify the expression of derating, and add the installation diagram	20211207	Chen Zhenzhen	Zheng Lei	Wang Jili
7	Modify protection class description	20220408	Chen Zhenzhen	Zheng Lei	Jia chaoju
8	Update the temperature derating parameters, increase the recommended torque revolutions, and change the size of the fixing nut to 6.5mm	20230105	Zheng Lei	Liu donghui	Hu qi

1、Application

The NDG3V-50(H) series switch-disconnectors are applicable to electric systems with a rated voltage up to DC 1500V or AC 1000V 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



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

4、Main technical parameters

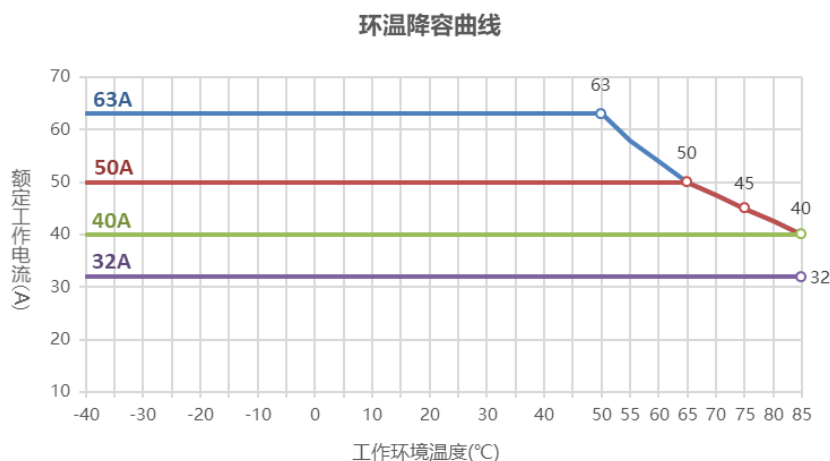
Parameter name	Category/unit			Description of the specific parameters						
Frame current	A			63						
Conventional heating current	A			63						
Isolation voltage	V			1500						
Rated impulse withstand voltage	kV			8						
NDG3V-50 Rated current (A)	DC Voltage(V)		Product No.	500	600	700	800	1000	1100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

NDG3V-50H Rated current (A)	DC Voltage(V)		Product No.	800	1000	1200	1250	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			0.76				
Rated short circuit making capacity	kA			1.4				
Mechanical life	Times			10000				
Electrical life	Times			300				
Operating torque	N.m			1.5~2.2				
Fixed moment of the complete appliance	N.m			2.0~2.5(Recommended electric gun revolution ≤ 500 r/min)				
Connection moment	N.m			1.5~1.7(Applicable to the specification of distribution head PH2)				
Fixed moment of handle	N.m			0.6~0.75				
Recommended connection area	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							

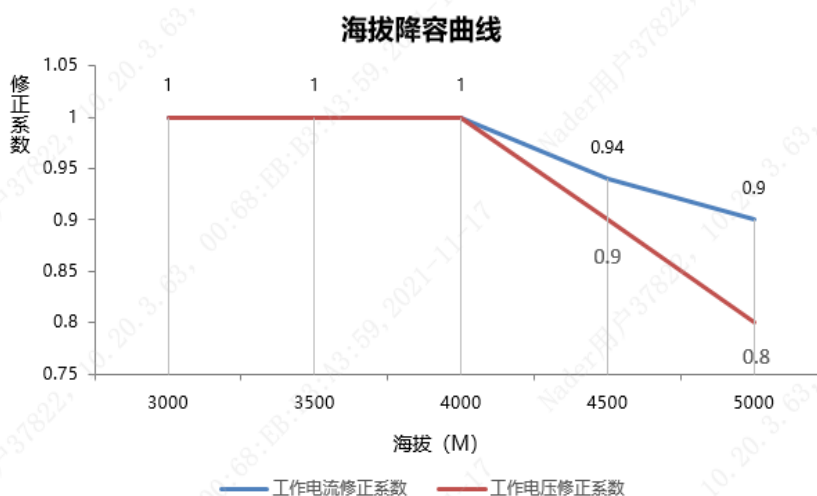
- Applicable standards :GB/T 14048.1; GB/T 14048.3; IEC 60947-1; IEC 60947-3
- Exchange product frequency: 50 / 60Hz
- Certificated: CCC、CE、TUV(All the models);
Australian certification(Only NDG3V-50 Product No. AS)

5、Working conditions

- 1) The ambient air temperature range for normal operation is $-40\sim+85\text{ }^{\circ}\text{C}$, and the rated working current derating curve according to the ambient temperature is shown below (voltage does not derate); When the ambient air temperature exceeds $+85\text{ }^{\circ}\text{C}$ or is lower than $-40\text{ }^{\circ}\text{C}$, the user shall negotiate with the manufacturer.



- The above data are tested in completely enclosed space, without any heat dissipation facilities and without air circulation, for customer reference.
 - The switch can be used normally if the heat dissipation function is added to the surrounding environment of the switch and the actual temperature of the shell and terminal position is not higher than $100\text{ }^{\circ}\text{C}$ when the switch is working.
- 2) Normal installation altitude shall not exceed 4000m, Refer to the following figure for capacity reduction when using higher than 4000m:



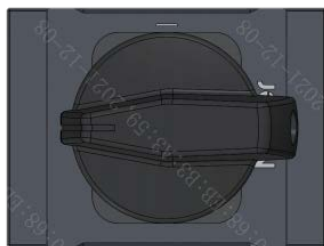
- 3) The relative humidity at an ambient temperature of $+40^{\circ}\text{C}$ should not exceed 50%. A higher relative humidity is allowed at a lower temperature. For example, it can be 90% at 20°C . Special measures should be taken to address occasional condensing due to

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) The installation types III and IV are applicable to the product.

6、Installation Method

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

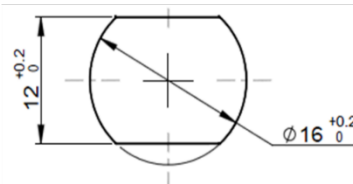
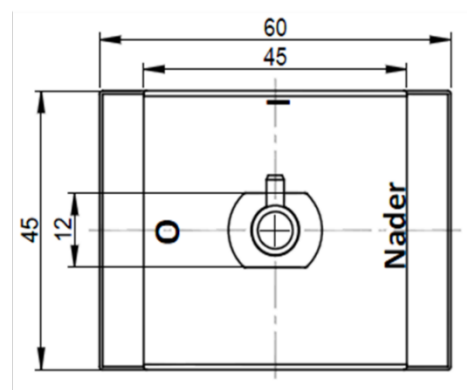
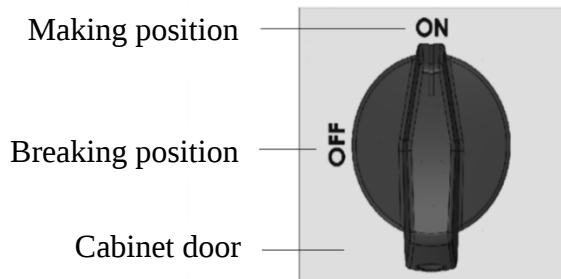


Breaking position



Making position

6.2 Installation dimension:

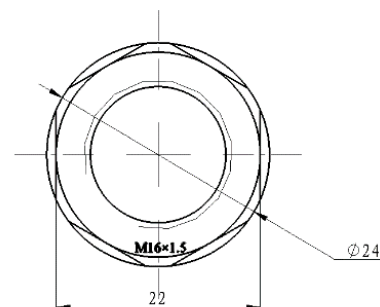


Opening size on door

6.3 Fixing nut:



Overall thickness 6.5mm

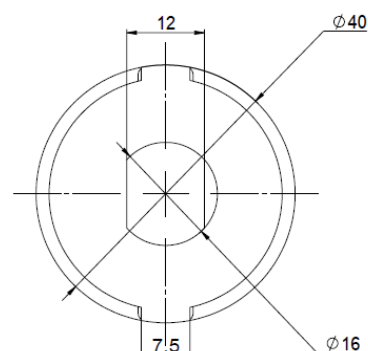


6.4 Handle stop of opening position lock handle:



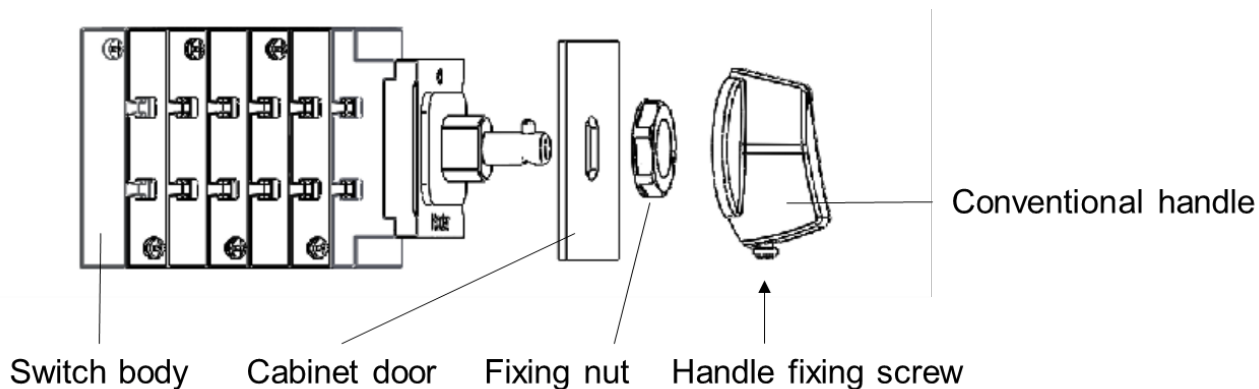
Base plate thickness 2mm

Overall thickness 6mm



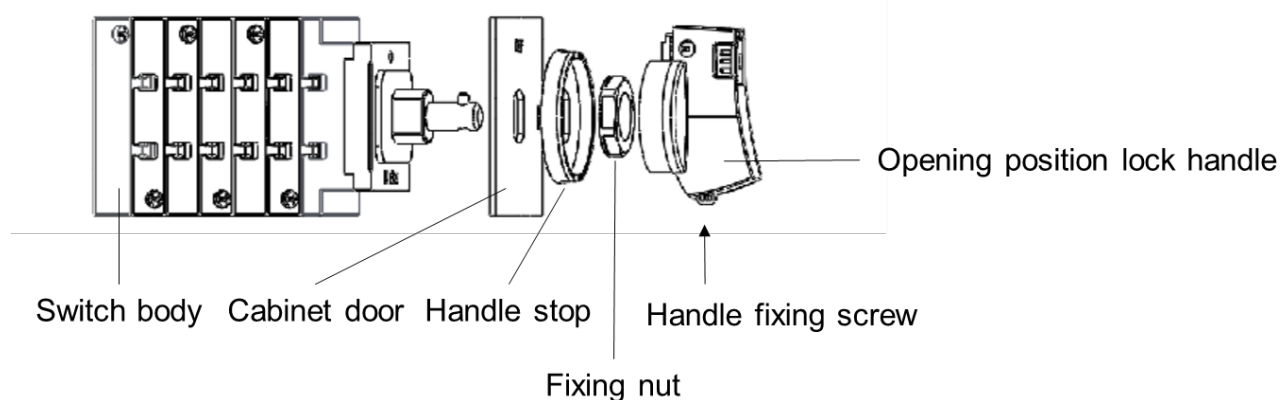
6.5 Installation method: Install it on the cabinet door by using the handle.

6.5.1 Installation instruction of switch and conventional handle:



Put the switch body into the opening of the cabinet door, install the fixing nut and handle in place in sequence, and then tighten the handle fixing screw along the direction of the arrow.

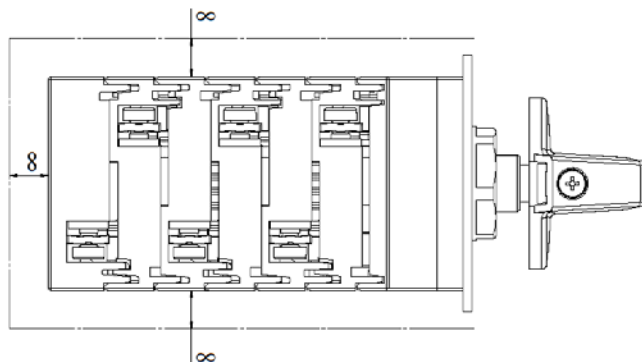
6.5.2 Installation instruction of switch and opening position lock handle:



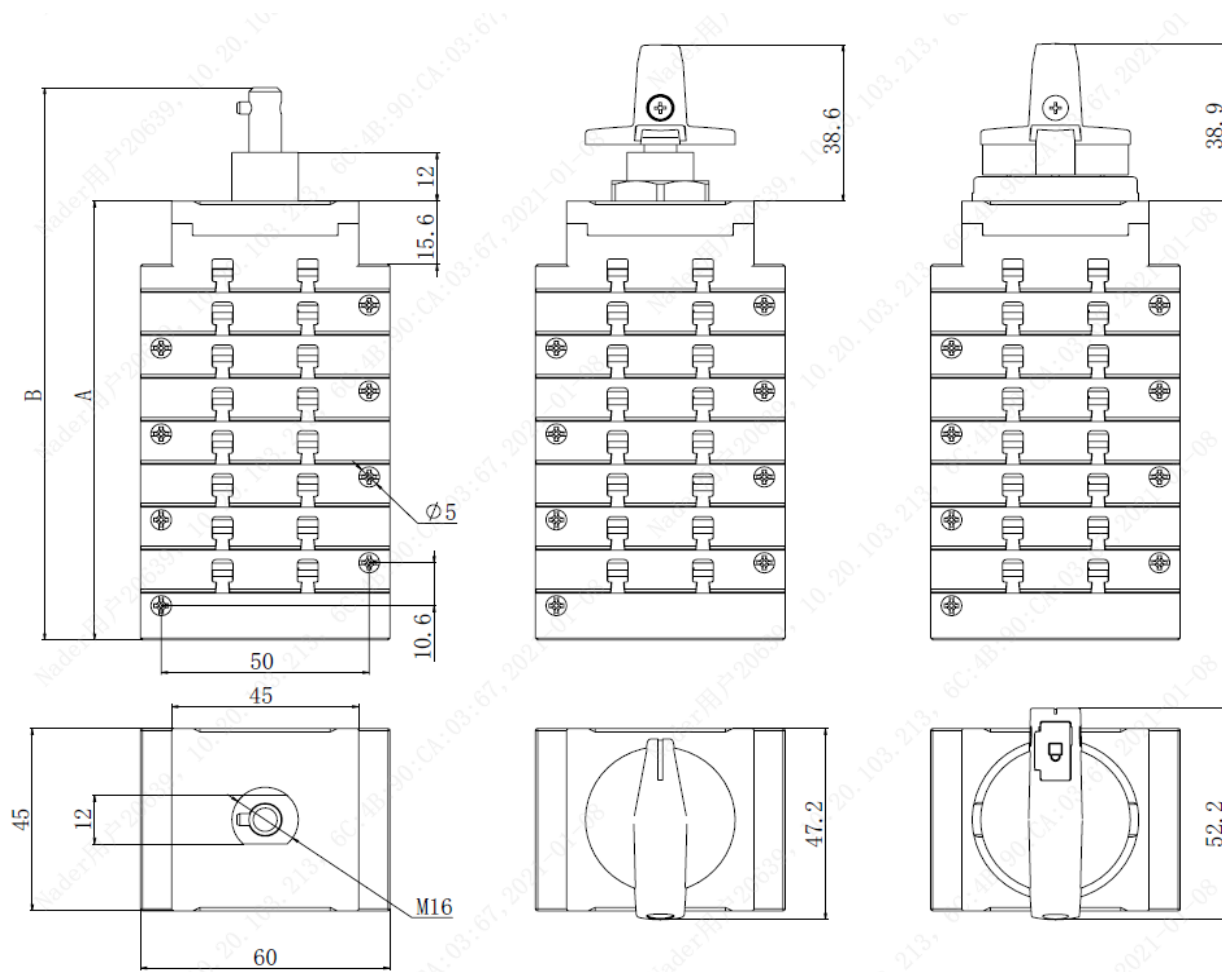
Put the switch body into the opening of the cabinet door, install the Handle stop, fixing nut and handle in place in sequence, and then tighten the handle fixing screw along the direction of the arrow.

* Opening position lock handle screw is plum-shaped hexagonal with holes,T10.

6.5.3 Recommended installation distance(Unit:mm) :



7、Outline and installation dimensions



Size of switch body

Conventional handle size

Opening position lock handle

size

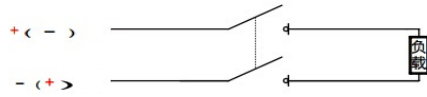
(excluding handle)

NDG3V-50(H) outline and installation dimensions

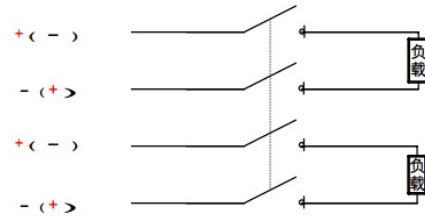
	A	B	weight(g)
Switch body of 2P	44.7±0.5	72.7±0.7	137
Switch body of 3P	55.4±0.5	83.4±0.7	173
Switch body of 4P	66±0.5	94±1	207
Switch body of 6P	87.2±0.7	115.2±1	273
Switch body of 8P	108.4±1	136.4±1.5	342
Conventional handle	/	/	12
Opening position lock handle	/	/	21

8、Wiring Mode (Wiring Diagrams)

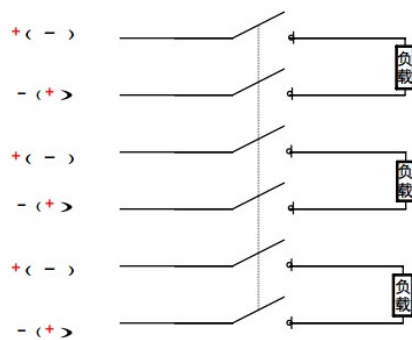
8.1 Series Connection Diagram Cabling Across for Two Layers of the Product with a DC Power Supply



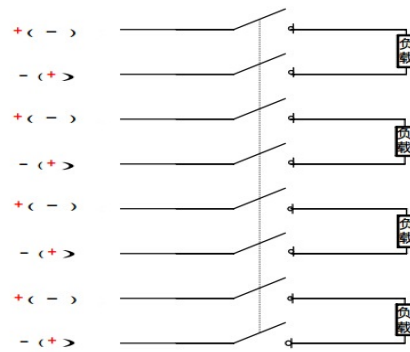
Cabling across two layers



Cabling across four layers

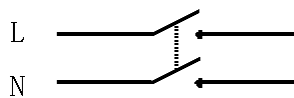


Cabling across six layers

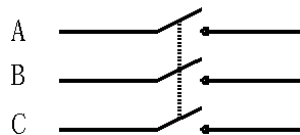


Cabling across eight layers

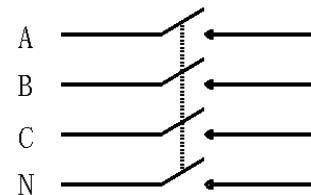
8.2 Cabling for the AC Power Supply



Cabling across two layers

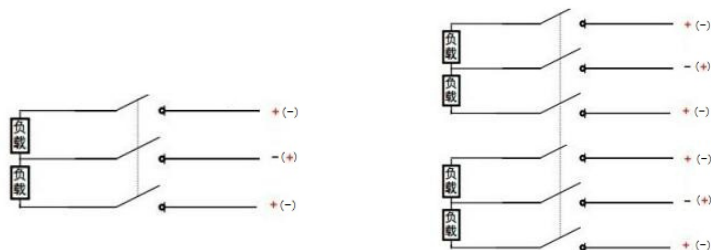


Cabling across three layers



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	Conventional handle	Opening position lock handle
1	NDG3V-50(H)	2,3,4	60pcs/box	45pcs/box
2		6	30pcs/box	20pcs/box
3		8	25pcs/box	14pcs/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°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 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.