

Shanghai Liangxin Electrical Co., Ltd.

(NDG3-100/125 Disconnecting Switch)

Product Specification

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

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Countersigned by	<u>Jiang Zhaoyong</u>	Date	<u>2020.05.25</u>
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Approved by	<u>Wang Jili</u>	Date	<u>2020.05.25</u>

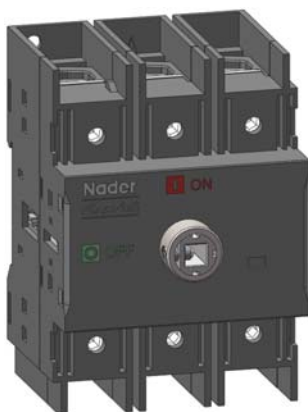
Revision History

Revision History					
Version	Revision Reason/Content	Implementation Date	Prepared by	Reviewed by	Approved by
0	New addition	20160325	Liu Qinglu	Yao Wei	Zhou Bo
1	Parameter modification	20140903	Liu Qinglu	Yao Wei	Zhou Bo
2	Handle outside a cabinet is required to be ordered separately when operation mode of the handle outside a cabinet is optional.	20160104	Liu Qinglu	Yao Wei	Zhou Bo
3	Template update; addition of the IP65 handle	20181123	Wang Jili	Zhang Jiazheng	Zhou Bo
4	Update of outline dimensions, etc.	20200409	Zheng Lei	Fu Chuantao	Wang Jili

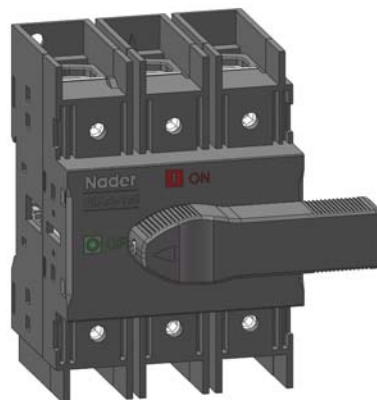
1. Applicable Scope and Purpose

The NDG3-100/125 disconnecting switch is applicable to the electric system with the rated current of 100/125A and the rated voltage of AC380/400/415V, AC500V, AC660/690V (50/60Hz) or DC110V, DC250V and below, which provides the breaking and isolation function in the line. The product can also be used for infrequent making and breaking. It can be widely used in construction, telecommunication, metallurgy and other industries, for the line isolation, motor control of various equipment and other fields.

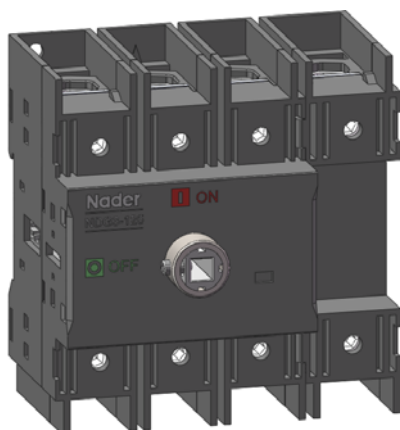
2. Picture of the Product (The picture below is for reference only; please subject to the kind)



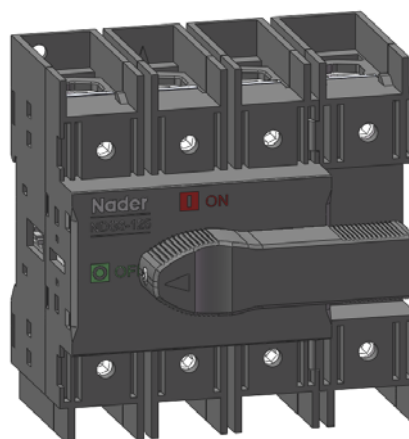
3-pole basic type



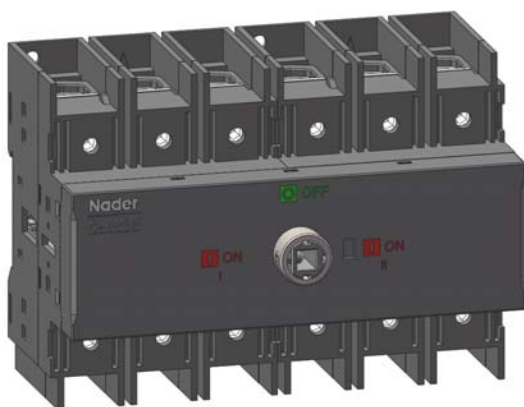
3-pole with an inside-cabinet handle



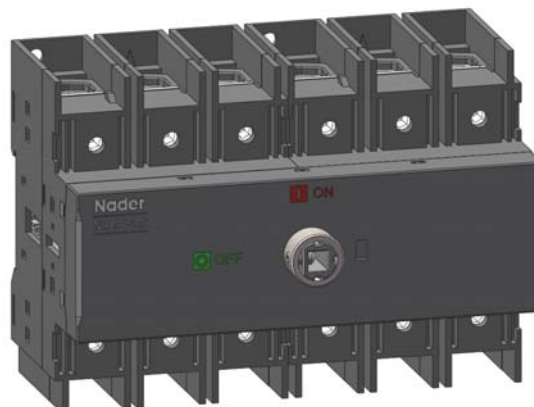
4-pole basic type



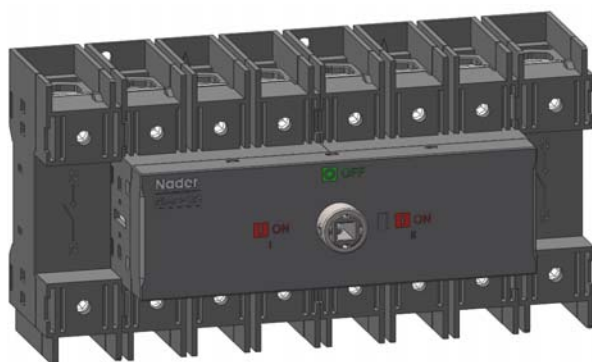
4-pole with an inside-cabinet handle



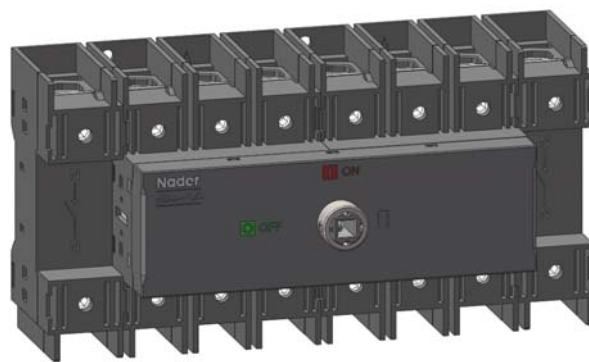
6-pole manual dual power supply



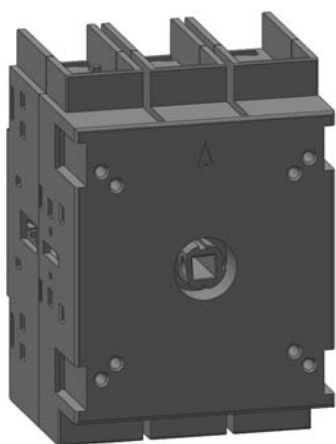
6-pole interlocking



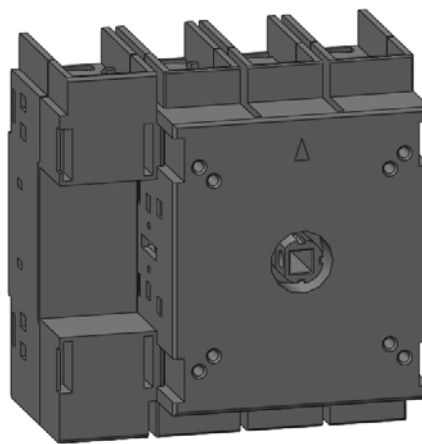
8-pole manual dual power supply



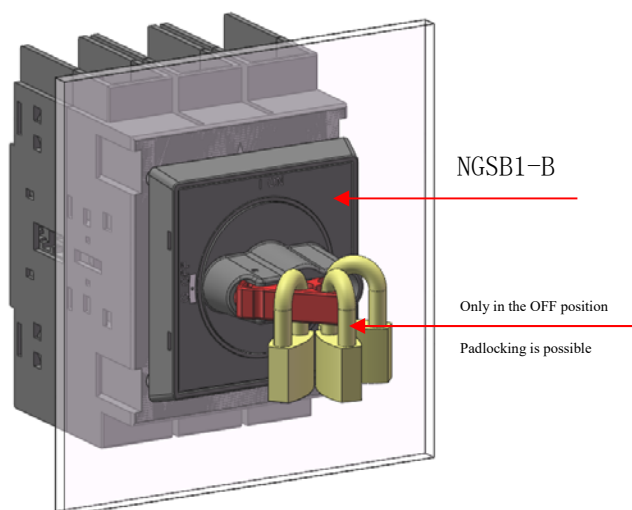
8-pole interlocking



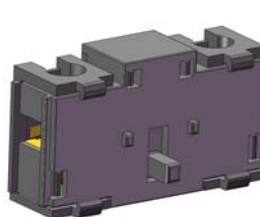
Cabinet door installation product: 3P



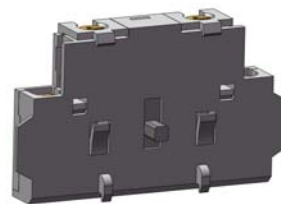
Cabinet door installation product: 4P



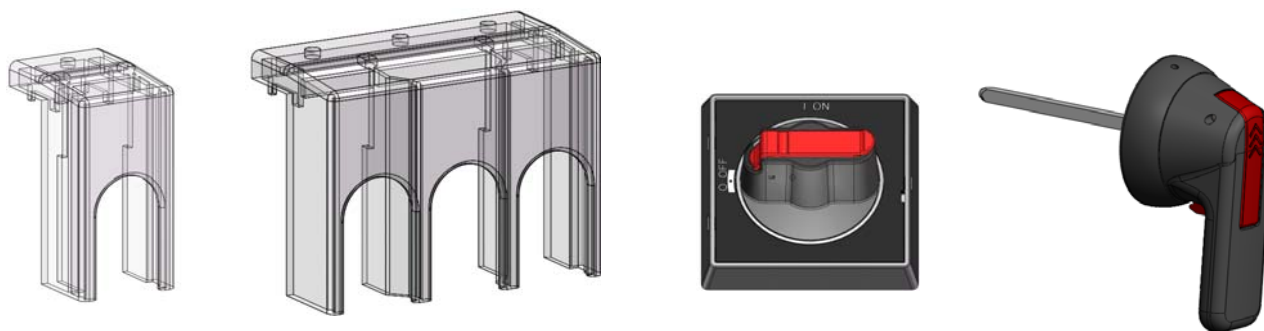
Cabinet door installation product:
Installation schematic diagram
(NGSB1-B handle must be selected)



NGF1-01/10



NGF1-11



NGZ1-125/1

NGZ1-125/3

NGSB1-B

SB1-130/G3-125

3. Specification and Model Description

3.1 NDG3-100/125 model interpretation

ND G 3 - 125 / 3 A Z K S

1 2 3 4 5 6 7 8 9

SN	Code name	Code description
1	Enterprise code	ND "Nader" brand low-voltage electrical device
2	Product code	G Isolating switch
3	Design SN	3
4	Rated current (A)	100:100A 125:125A
5	Number of poles	3:3P 4:4P 6:6P 8:8P
6	pole type	A: Neutral pole to be on-off with the main switch (N pole) B: Feed-through neutral pole No code: No neutral pole
7	Installation mode	Z-Guide rail and screw installation M-Cabinet door installation (without the inside-cabinet operation, NGSB1-B handle outside a cabinet must be ordered)
8	Handle type	K: Direct inside-cabinet operation handle No code: No handle (handle outside a cabinet is provided, which shall be ordered separately, see "Common Handle Specifications" for details)
9	Derived code	S: Interlocking (manual dual power supply) L: Interlocking (all phase poles shall be on and off)

Note: Common specifications and models:

SN	Type	Specification
1	3P, guide rail and screw installation	NDG3-125/3 Z
2	4P, N-phase break point, guide rail and screw installation	NDG3-125/4 AZ
3	4P, N-phase without break point, guide rail and screw installation	NDG3-125/4 BZ
4	4P, cabinet door installation	NDG3-125/3 M
5	4P, N-phase break point, cabinet door installation	NDG3-125/4 AM
6	4P, N-phase without break point, cabinet door installation	NDG3-125/4 BM

7	6P, interlocking, guide rail and screw installation	NDG3-125/6 ZL
8	8P, interlocking N-phase break point, guide rail and screw installation	NDG3-125/8 AZL
9	8P, interlocking N-phase without break point, guide rail and screw installation	NDG3-125/8 BZL
10	6P, interlocking, guide rail and screw installation	NDG3-125/6 ZS
11	8P, interlocking N-phase break point, guide rail and screw installation	NDG3-125/8 AZS
12	8P, interlocking N-phase without break point, guide rail and screw installation	NDG3-125/8 BZS
13	3P, guide rail and screw installation, inside-cabinet operation (long)	NDG3-125/3 ZK
14	4P, N-phase break point, guide rail and screw installation, inside-cabinet operation (long)	NDG3-125/4 AZK
15	4P, N-phase without break point, guide rail and screw installation, inside-cabinet operation (long)	NDG3-125/4 BZK

3.2 Accessory model interpretation:

3.2.1 Selection of IP65 handle outside a cabinet

SB 1 -130/G3-125

1 2 3 4

SN	Code name	Code description
1	Accessory code	SB-handle
2	Design SN	1
3	Square shaft length	130: Shaft length 130mm; 150: Shaft length 150mm; 161: Shaft length 161mm; 185: Shaft length 185mm; 210: Shaft length 210mm; 260: Shaft length 260mm; 290: Shaft length 290mm.
4	Body model	G3-125: suitable for NDG3-100/125/160/200/250 products.

3.2.2 Auxiliary switch selection

N G F 1 - 01

1 2 3 4 5

SN	Code name	Code description
1	Enterprise code of accessories	N
2	Supporting product code	G Isolating switch
3	Auxiliary code	F
4	Design code	1
5	Contact form	01— One NC; 10— One NO; 11— One NO, one NC

Note: General auxiliary specifications

SN	Type	Specification	Product number
1	01— One NC;	NGF1-01	30000961
2	10— One NO;	NGF1-10	30000962
3	11— One NO, one NC	NGF1-11	30000396

3.2.3 Terminal cover selection

N G Z 1 - 125 / 1
1 2 3 4 5 6

SN	Code name	Code description
1	Enterprise code of accessories	N
2	Supporting product code	G Isolating switch
3	Terminal cover code	Z
4	Design code	1
5	Specification	125: Suitable for NDG3-100/125.
6	Pole usage type	1: For the single pole 3: For 3 poles

Note: Terminal cover specifications

SN	Specification	Product number	Remarks
1	NGZ1-125/1	30000965	Including 6 pieces, suitable for 1 set of 3P product.
2	NGZ1-125/3	30000964	Including 2 pieces, suitable for 1 set of 3P product.

4. Main Technical Parameters

4.1 Main parameters of the disconnecting switch

Product model			NDG3-100	NDG3-125
Agreed thermal current I _{th} (A)			125	
Number of poles			3, 4, 6, 8	
Rated insulation voltage (V)			750	
Rated impulse withstand voltage U _{imp} (kV)			8	
Rated working current (A)	Utilization category	Rated voltage (V)	NDG3-100	NDG3-125
	AC-21A	380/400/415	100	125

		500	100	125
		660/690	100	125
	AC-22A	380/400/415	100	125
		500	100	125
		660/690	100	125
	AC-23A	380/400/415	80	90
		500	60	70
		660/690	40	50
	DC-22A poles in series	110	100/2	125/2
		250	63/4	80/4
Rated short-time withstand current I _{cw} (kA)			2.5/1s	
Rated short circuit making capacity I _{cm} (kA peak value)			3.6	
Electrical life			1500 times	1000 times
Mechanical life			20000 times	
Connection capacity (mm²) (Bare-copper cable)			Main product: 10-50mm² Auxiliary: 0.75-2.5mm²	
Terminal screw specifications (metric system: diameter× length mm)			Main product: M8×16 (hexagon); Auxiliary: M3.5×9.5	
Terminal tightening torque (locking torque Nm)			Main product: 6Nm; auxiliary: 0.8Nm;	
Operating torque (N.m)			2.5	
Weight (Kg) (guide rail and screw installation without accessories)			0.36	
Installation mode			Guide rail and screw installation: Cabinet door installation	

- Comply with standards: Main products comply with IEC 60947-3, GB/T 14048.3;
- Frequency: 50/60Hz;
- Certificates: CCC, CE, TUV;

4.2 Main parameters of the auxiliary switch

- Electrical parameters

Rated working voltage:	AC230V	AC400V	AC690V	DC220V
Rated working current:	6A	4A	2A	0.6A

- Rated insulation voltage: AC690V
- Rated impulse withstand voltage U_{imp}: 4kV
- Agreed thermal current: I_{th}: 16A

- Minimum applicable load: DC24V/10mA
- Rated frequency: 50/60Hz
- Utilization category: AC-15, DC-13
- Protection class: IP20
- Electrical life: 20000 times
- Standard certification: GB/T 14048.5
- Comply with ROHS

5. Normal Working Environment

5.1 The ambient air temperature is $-40^{\circ}\text{C}\sim 70^{\circ}\text{C}$, and its average temperature within 24h shall not exceed $+35^{\circ}\text{C}$.

See the table below for usage in the high ambient temperature:

Ambient temperature ($^{\circ}\text{C}$)	75	80	85
Rated working current (A): NDG3-125	110	100	90
Rated working current (A): NDG3-100	100	100	90

5.2 See the table below for the altitude application:

Altitude (m)	2000	3000	3500	4000
Rated insulation voltage	750V	750V	750V	690V
Impulse withstand voltage	8	8	8	8
Power frequency withstand voltage	2500V	2200V	2000V	1890V
Rated working voltage	690V	690V	690V	690V
Rated working current (A): NDG3-125	125A	125A	110A	100A
Rated working current (A): NDG3-100	100A	100A	100A	100A

5.3 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.

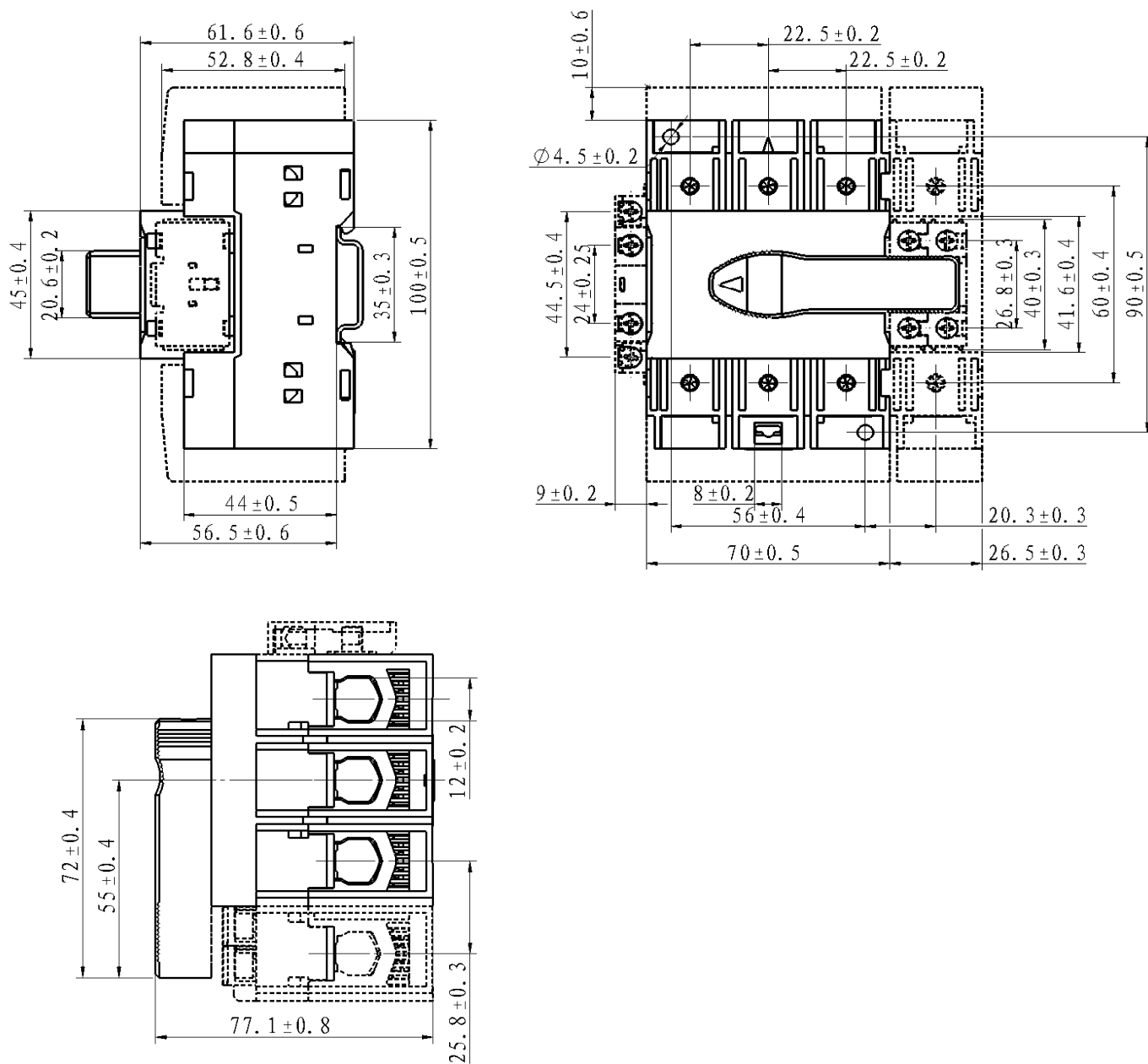
5.4 The product can be disposed in places that are free from explosive media, media corrosive to metal, insulation damaging gas, and conductive dust. The product should be avoided from snow and rain.

5.5 The product is applicable in an environment with pollution class III.

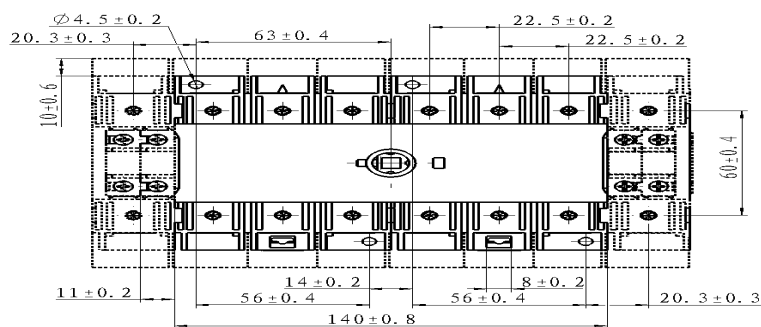
5.6 Installation category of III and IV.

6. Product Outline and Installation Dimensions

6.1 3P/4P product:

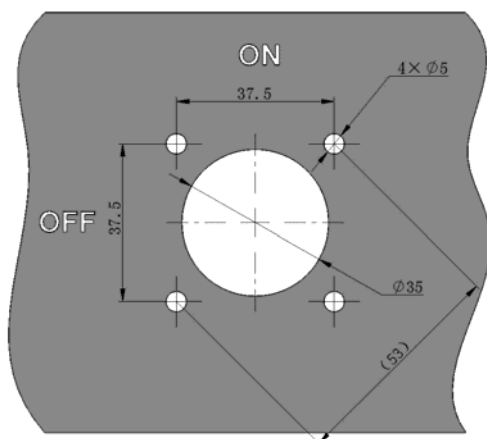


6.2 6P/8P product

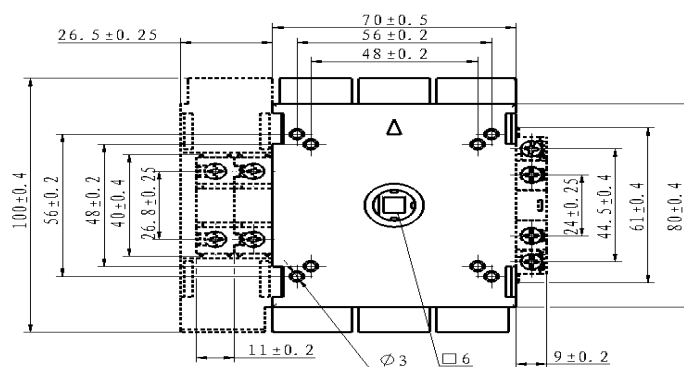
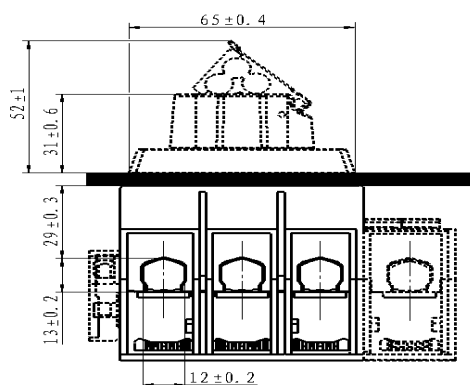
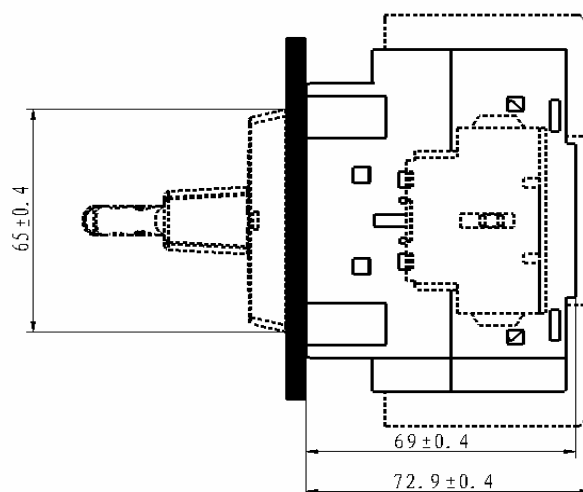
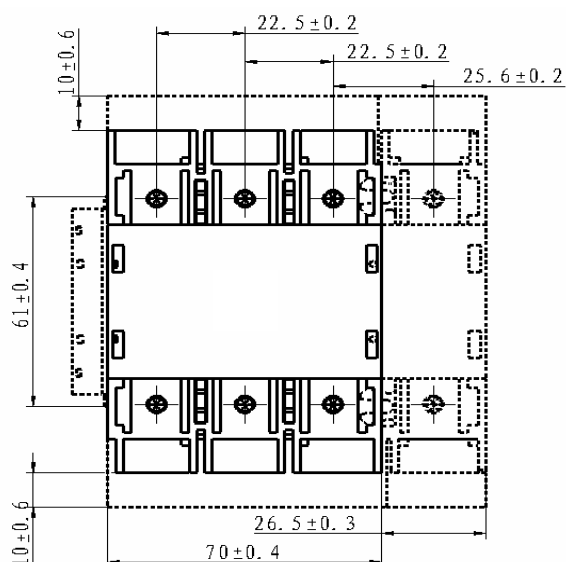


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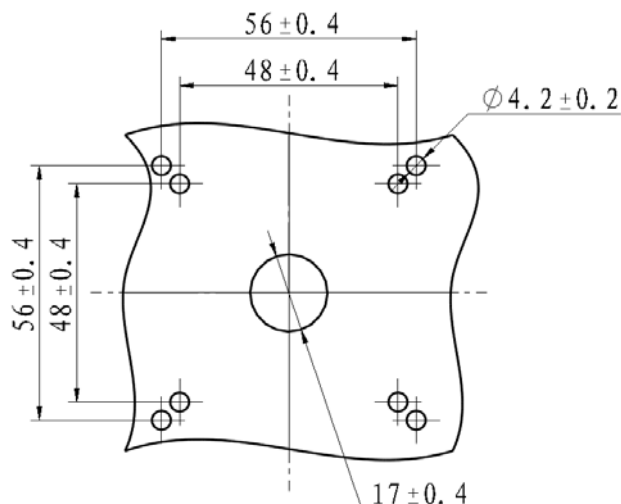
6.5 Dimension figure of handle outside a cabinet opening:



6.6 Cabinet door installation product



6.7 Cabinet door opening dimensions of cabinet door installation product:



7. Installation Mode

Guide rail, screw installation and cabinet door installation.

8. Packaging and Storage

8.1 Packaging

For NDG3-100/125 series 3P/4P products, 1 set/box, 18 boxes/carton; for 6P/8P, 1 set/box, 9 boxes/carton;

32 sets/box, 24 boxes/carton for NGF1-01/10;

12 sets/box, 24 boxes/carton for NGF1-11;

For NGZ1-125/1 terminal cover, 18 pieces/box, 18 boxes/carton; for NGZ1-125/3 terminal cover, 16 pieces/box, 9 boxes/carton;

For NGSB1-B handle, 4 pieces/box (16 screws provided), 18 boxes/carton.

When the carton is not full, products with different specifications can be mixed with the corresponding box sticker to be affixed; but when the box is not full, products with different specifications can't be mixed.

8.2 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 +70°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.

9. List of Accessories and Installation

SN	Name	Model	Accessories installation and quantity
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1	Terminal cover	NGZ1-125/1	Installed on the inlet&outlet wire ends of the N-pole product
2	Terminal cover	NGZ1-125/3	Installed on the inlet&outlet wire ends of the main switch
3	Auxiliary switch	NGF1-01	Installed on both sides of the main switch, up to 2 on each side, with a maximum of 4 in total
4	Auxiliary switch	NGF1-10	Installed on both sides of the main switch, up to 2 on each side, with a maximum of 4 in total
5	Auxiliary switch	NGF1-11	Installed on both sides of the main switch, 1 on each side, with a maximum of 2 in total
6	Handle	NGSB1-B	To be used with the cabinet door installation product, 1 each set

Note:

1. NGF1-11 can't be installed on the same side with the N phase;
2. For the guide rail and screw installation product, wire the auxiliary switch and install it on the main switch if NGF1-01/10 is installed on the same side with the N pole;
3. For the cabinet door installation product, wire NGF1-01/10/11 and install it on the main switch;
4. Before installation, select the installation hole position and open up a knock-down hole for the NGSB1-B handle.

10. Precautions

- a) A user must be responsible for addressing a product issue that occurs because the user disassembles the product without approval;
- b) Do not touch the non-insulated exposed parts of the circuit breaker when it is connected to a power supply;
- c) Reliable cabling is required to prevent the terminals from being burnt out due to abnormal heat at the terminals;
- d) During wiring, insert the conductor fully into the terminal and extend it to the utmost bottom end, with the wiring torque of isolating switch: 6N.m; the wiring torque of auxiliary switch is 0.8N.m.
- e) 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;