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NDG3-500~1250 (NDG3 serie) Disconnecting switch

2016 Edition

Nader

COMPANY PROFILE

Shanghai Liangxin Electrical Co., LTD. one of the leading low-voltage electrical component manufacture in the high-end market, was established in 1999. Nader was successfully listed at Shenzhen Stock Exchange on 21st Jan. 2014.

Holding the spirit that client's demand drives our R&D process and client's value requires for our innovation, we endeavor to solve customer's challenge, win competitive edge for them and positive safe, reliable and energy saving low-voltage appliance for them.

Our company focus on low-voltage electrical components area. According to excellent corporate culture,good service system,positive business policy, reliable inspection and manufacture equipment and industrial leading client's applications, we received a good reputation and established an important industrial position.

CONTENTS

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1. Product overview

Specifications	NDG3-500			NDG3-630			NDG3-800		
Number of poles	3、4			3、4			3、4		
Special applications	DC photovoltaic products								
Rated operating current Ie(A)	Use class	Rated voltage	Rated current	Use class	Rated voltage	Rated current	Use class	Rated voltage	Rated current
	AC22B	380/400/415V	500	AC22B	380/400/415V	630	AC22B	380/400/415V	800
		660/690V	400		660/690V	500		660/690V	500
	AC23B	380/400/415V	400	AC23B	380/400/415V	500	AC23B	380/400/415V	/
		660/690V	315		660/690V	315		660/690V	/
	DC21B	750V	500/3	DC21B	750V	630/3	DC21B	750V	800/3
		1000V	500/4		1000V	630/4		1000V	800/4
Product certification	CCC、CE、TUV								

Specifications	NDG3-1000			NDG3-1250		
Number of poles	3、4			3、4		
Special applications	DC photovoltaic products					
Rated operating current Ie(A)	Use class	Rated voltage	Rated current	Use class	Rated voltage	Rated current
	AC22B	380/400/415V	1000	AC22B	380/400/415V	1250
		660/690V	800		660/690V	800
	AC23B	380/400/415V	800	AC23B	380/400/415V	1000
		660/690V	500		660/690V	500
	DC22B	750V	1000/3	DC22B	750V	1250/3
		1000V	1000/4		1000V	1250/4
Product certification	CCC、CE、TUV					

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2. Product features

2.1 Scope of application and purpose

NDG3 series disconnecting switches apply to power systems with AC frequency of 50/60Hz, rated voltage of DC1000V and below, and rated current of 1250A and below. The product could be used in infrequent switching for isolating and breaking the line and providing safe isolation for low-voltage circuits in the field of PV.

2.2 Design features

Rapid switching, safe isolation, louvers with wide spacing and multi-channel, dust and flashover prevention.

2.3 Structural features

● NDG3-500/630/800

NDG3-500/630/800 front indication

1.Terminal board
2.Switching identification nameplate
3.Auxiliary switch position
4.Parameter nameplate
5.Switching indication window
6.Rotation shaft
7.Insulating flash barrier position

● NDG3-1000/1250

NDG3-1000/1250 front indication

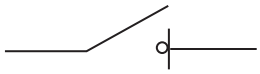
1.Terminal board
2.Switching identification nameplate
3.Auxiliary switch position
4.Parameter nameplate
5.Switching indication window
6.Rotation shaft
7.Insulating flash barrier position

2.4 Meeting the following standards

- GB 14048.1 Low-voltage switchgear and control equipment Part 1:General rules
- GB 14048.3 Switches, disconnectors, switch disconnectors and fuse-combination units
- IEC 60947-1 Low-voltage switchgear and controlgear-Part 1:General rules
- IEC 60947-3 Low-voltage switchgear and controlgear. Switches, disconnectors, switch-disconnectors and fuse-combination units

3. Application scope

3.1 Electrical symbols

Disconnecting switch 

3.2 Applicable environment

Temperature of the working environment/storage temperature

- Temperature of the working environment -25~+70℃, and its average temperature within 24h should not exceed +35℃. When the ambient temperature is below -25℃, the user should consult with the manufacturer for use.
- Storage temperature:-40 ~ 85℃.

Altitude

Altitude: ≤ 2,000m.

Relative humidity for operation/Relative humidity for storage

The relative humidity of atmosphere is not more than 50% at the ambient air temperature of +40℃; at a lower temperature, a higher relative humidity is allowed, for example:90% at 20℃. Special measures should be taken to deal with occasional condensation due to temperature change.

3.3 Pollution grade

Grade 3.

3.4 Protection grade

- Protection grade: IP20 ;
- Handle Protection grade: IP65。

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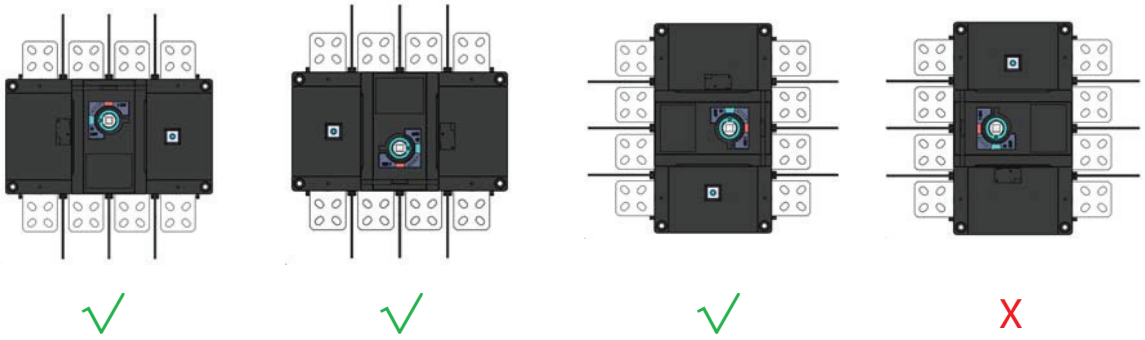
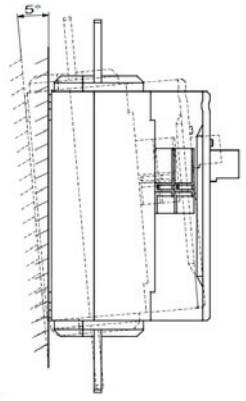
3.5 Installation category

- Category Ⅲ (power distribution and control level)
- Class Ⅲ (power level)

3.6 Installation direction

- Vertical mounting, the gradient between the mounting plane and the vertical plane should be ≤ ± 5 ° .
- Horizontal mounting.
- When mounted vertically, the switching indication window shouldn ' t be upward, as shown in the fourth installation method.





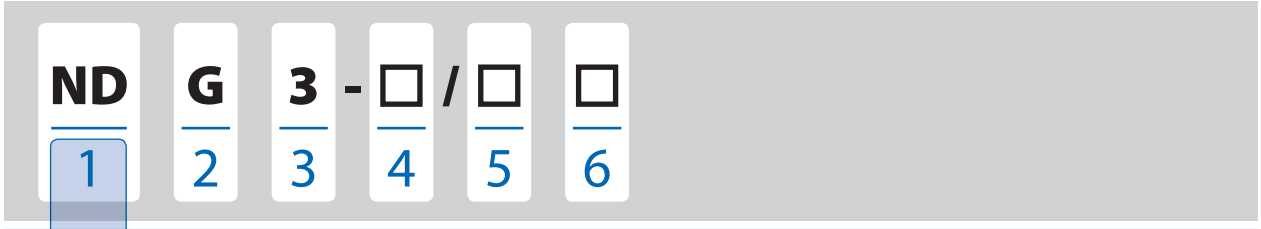
Vertical mounting inclination is no more than 5 °

3.7 Environmental protection requirements

RoHS requirements are met.

4. Technical characteristics of the product

4.1 Description of specifications and models



Serial No.	Description of serial number	NDG3
1	Enterprise code	ND： Nader brand low-voltage apparatus
2	Product code	G： Disconnecting switch
3	Design serial No.	3
4	Specifications	500、630、800、1000、1250
5	Number of poles	3、4
6	Current Type	No code : Conventional product Z： DC photovoltaic product [1)]

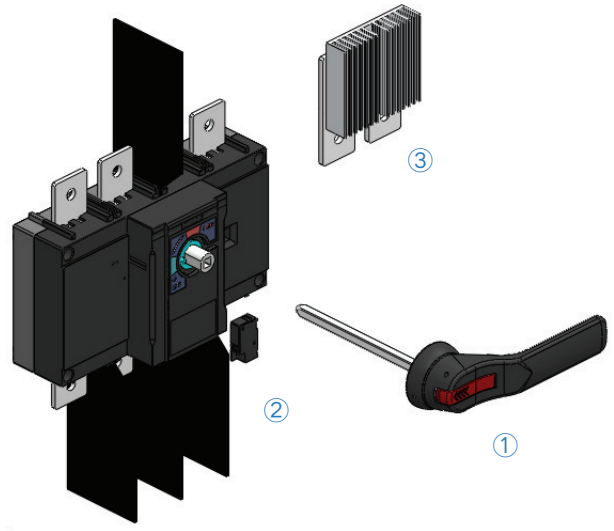
Note: 1) To order phase-to-phase bonding MX1/G3-□, please contact with the local dealer.

4.2 Technical parameters

Technical parameters	Classification / Unit		Description of specific parameters				
Rated current In	A		500	630	800	1000	1250
Conventional heating current	A		800			1250	
Number of poles	Pole		3，4				
Insulation voltage Ui	V		1000				
Rated impulse withstand voltage Uimp	kV		12				
Rated operating current Ie(A)	AC22B	415V	500	630	800	1000	1250
		690V	400	500	500	800	800
	AC23B	415V	400	500	/	800	1000
		690V	315	315	/	500	500
	DC21B	750V	500/3	630/3	800/3	/	/
		1000V	500/4	630/4	800/4	/	/
	DC22B	750V	/	/	/	1000/3	1250/3
		1000V	/	/	/	1000/4	1250/4
Rated short-time withstand current: Icw	kA 1s		AC: 16 kA DC:10 kA			AC: 35 kA DC: 10 kA	
Rated short-circuit making capacity:Icm	kA		AC: 32 kA DC: 17 kA			AC: 50 kA DC: 17 kA	
Mechanical life	次		5000				
Operating torque	N.m		18			40	
Binding screw tightening torque	N.m		10			14	
Cross-sectional area of connecting copper bar	mm		2 pieces of 30 × 5	2 pieces of 40 × 5	2 pieces of 50 × 5	2 pieces of 60 × 5	2 pieces of 80 × 5
Installation mode			M6 screw mounted			M8 screw mounted	

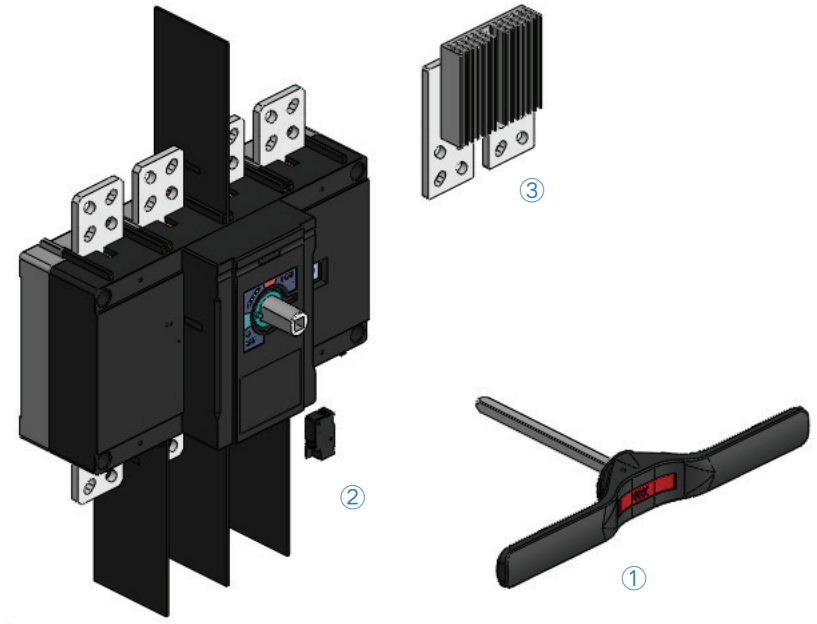
5. Accessories

5.1 List of accessories



5.1.1 NDG3-500,NDG3-630,NDG3-800 accessories forms

Serial No.	Name	Remarks
1	Handle	Mounted on the cabinet door, each one per set, with optional shaft lengths including 200mm and 400mm
2	Auxiliary switch	Mounted on the front of the left side of the main switch, up to two
3	Phase-to-phase bonding	Mounted on the terminal block of the main switch



5.1.2 NDG3-1000,NDG3-1250 accessories forms

Serial No.	Name	Remarks
1	Handle	Mounted on the cabinet door, each one per set, with optional shaft lengths including 200mm and 400mm
2	Auxiliary switch	Mounted on the front of the left side of the main switch, up to two
3	Phase-to-phase bonding	Mounted on the terminal block of the main switch

5.2 Accessories Function description

Component	Function
Auxiliary switch	Synchronous monitoring of the switching state of the product
Handle outside the cabinet	Cabinet installation Operation outside the cabinet
Phase-to-phase bonding	Main pole cascade realizes DC applications

5.3 Configuration of standard accessories

SB1/G3-800

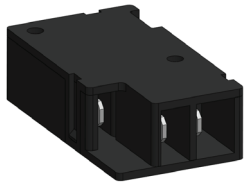
SB1-200/G3-800
SB1-400/G3-800

SB1/G3-1250

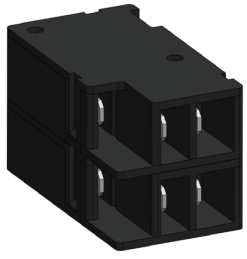
SB1-200/G3-1250
SB1-400/G3-1250

Handle

Model	Applicable switches	Square shaft size
SB1/G3-800	NDG3-500/630/800	No square shaft
SB1-200/G3-800	NDG3-500/630/800	Shaft length 200mm
SB1-400/G3-800	NDG3-500/630/800	Shaft length 400mm
SB1/G3-1250	NDG3-1000/1250	No square shaft
SB1-200/G3-1250	NDG3-1000/1250	Shaft length 200mm
SB1-400/G3-1250	NDG3-1000/1250	Shaft length 400mm



F1-11A/G3-800



F1-11B/G3-800

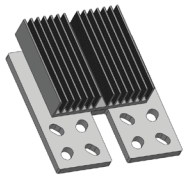
Auxiliary switch

Model	Applicable switches	Function
F1-11A/G3-800	NDG3-500/630/800/1000/1250	1NO+1NC one installed
F1-11B/G3-800	NDG3-500/630/800/1000/1250	1NO+1NC one installed

Characteristics: According to GB 14048.5, IEC 60947-5-1

Contactor type	Rated current In (A)	Operating current Ie(A)		
		250V AC AC-12	250V DC DC-12	125V DC DC-12
NO+NC	16	16	0.3	0.6

MX1/G3-800



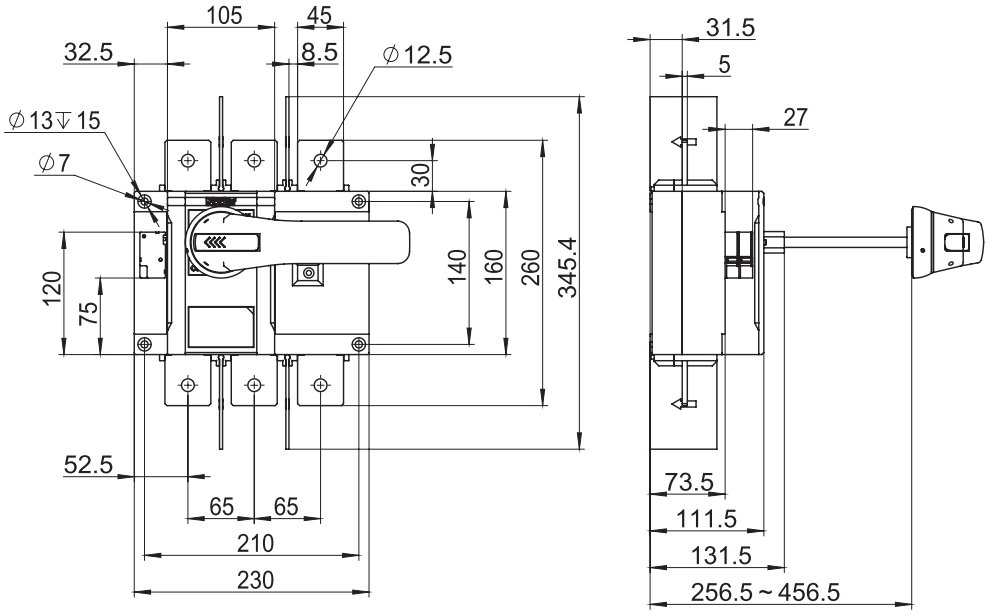
MX1/G3-1250

Phase-to-phase bonding		
Model	**Applicable switches**	**Function**
MX1/G3-800	NDG3-500/630/800	DC series
MX1/G3-1250	NDG3-1000/1250	DC series

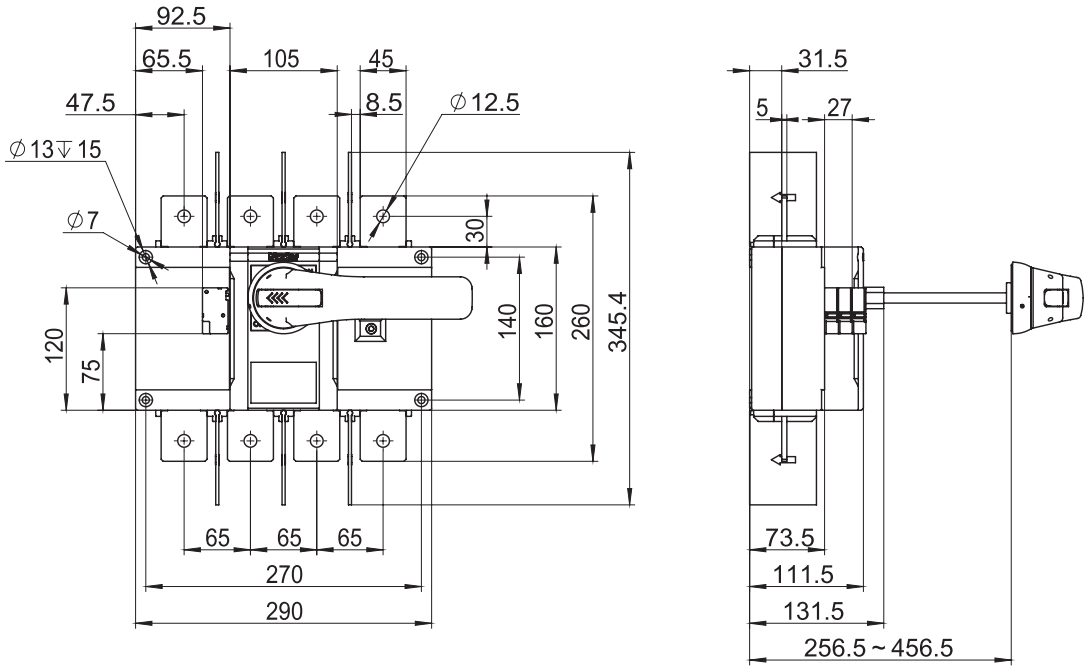
6. Product outline and installation dimensions

6.1 Outline and installation dimension

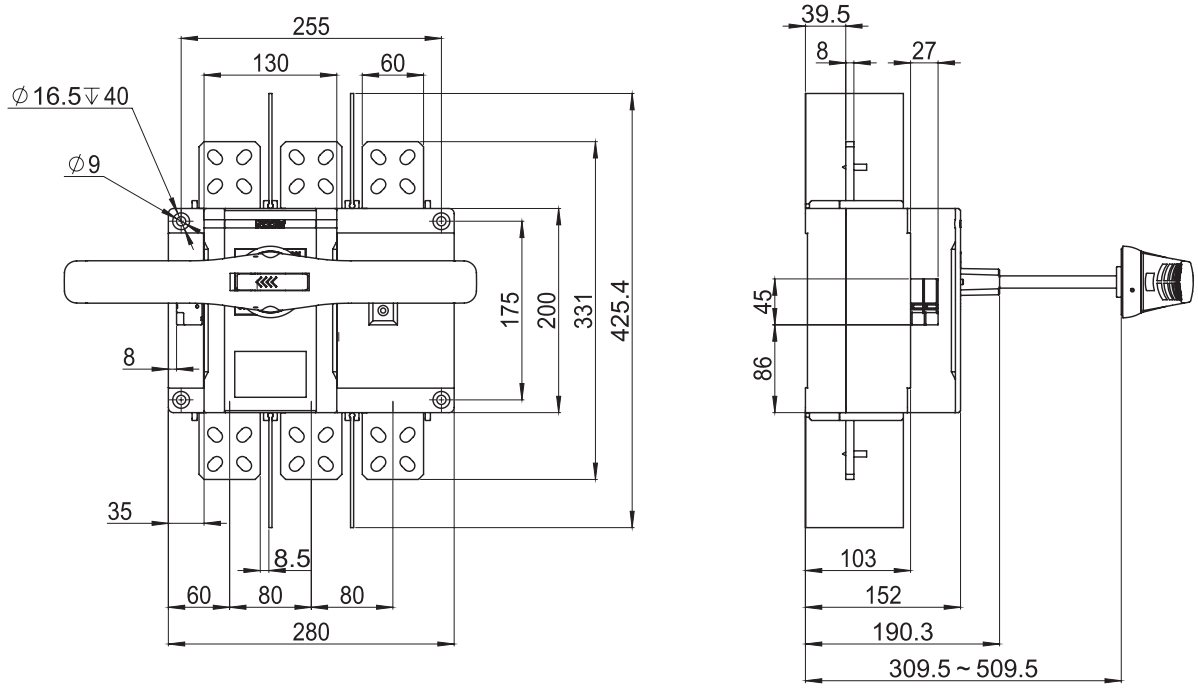
6.1.1 NDG3-500/630/800 three-pole outline and installation dimensions



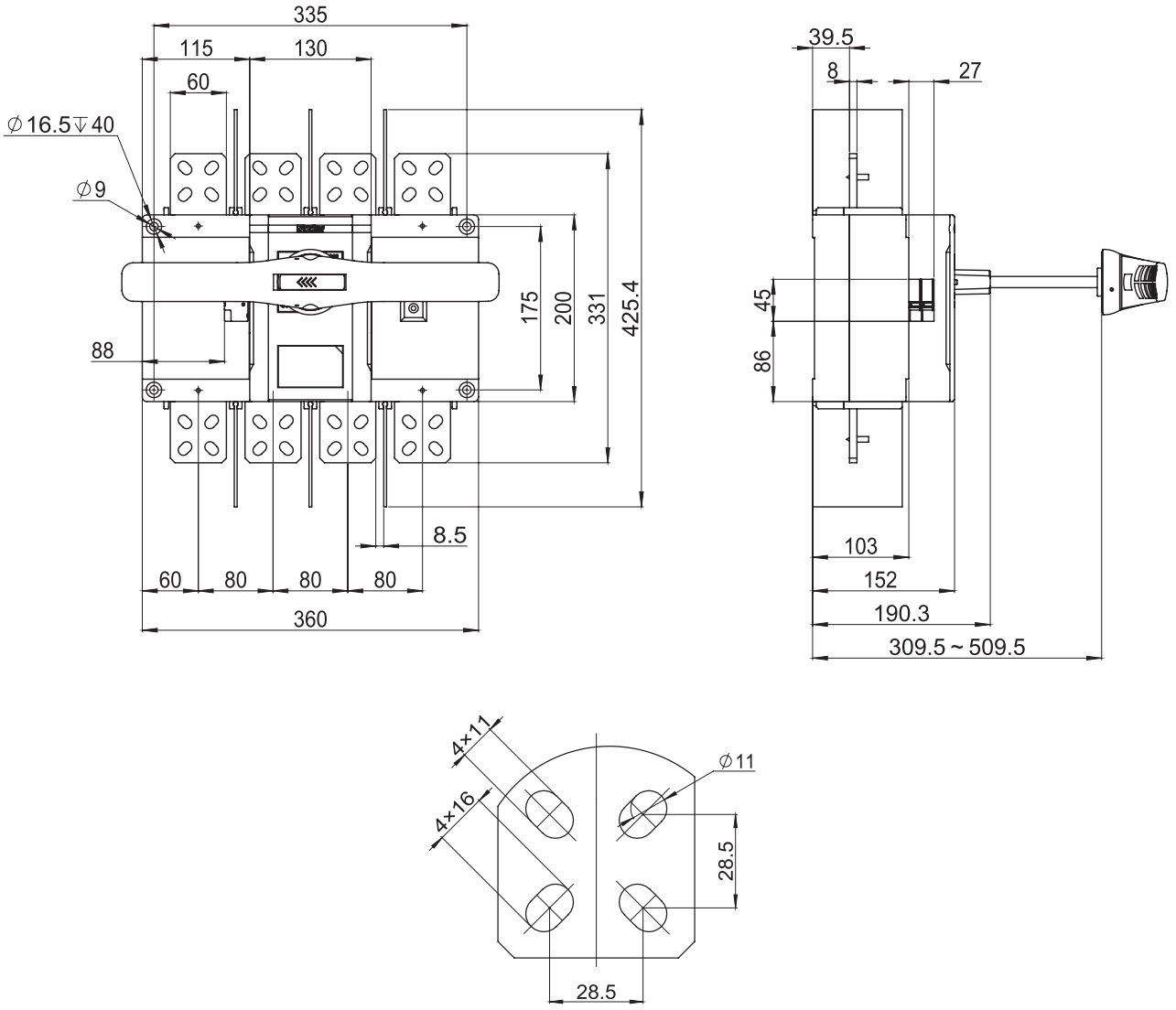
6.1.2 NDG3-500/630/800 four-pole outline and installation dimensions



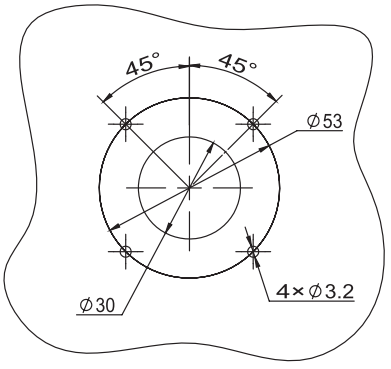
6.1.3 NDG3-1000/1250 three-pole outline and installation dimensions



6.1.4 NDG3-1000/1250 four-pole outline and installation dimensions

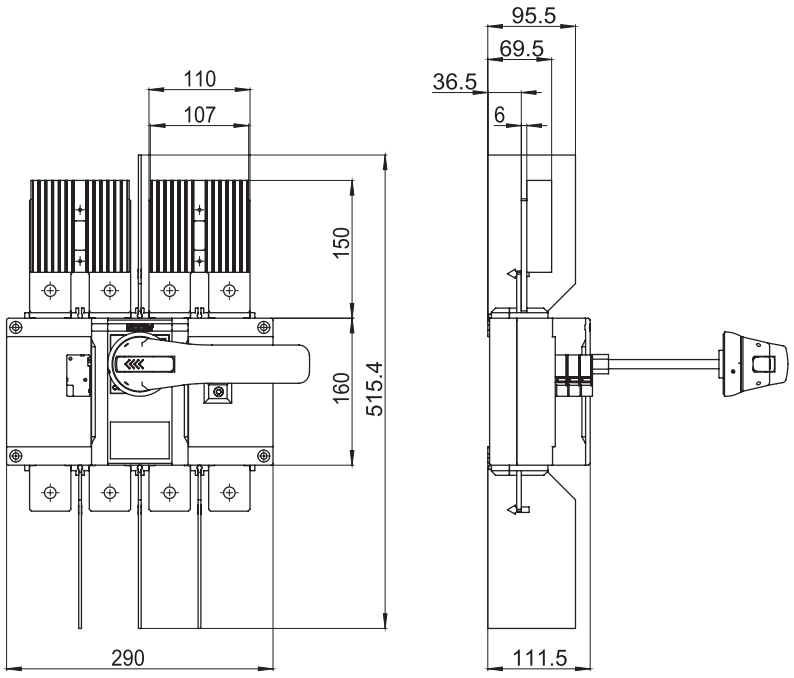


6.1.5 Hole dimensional drawing for cabinet door installation

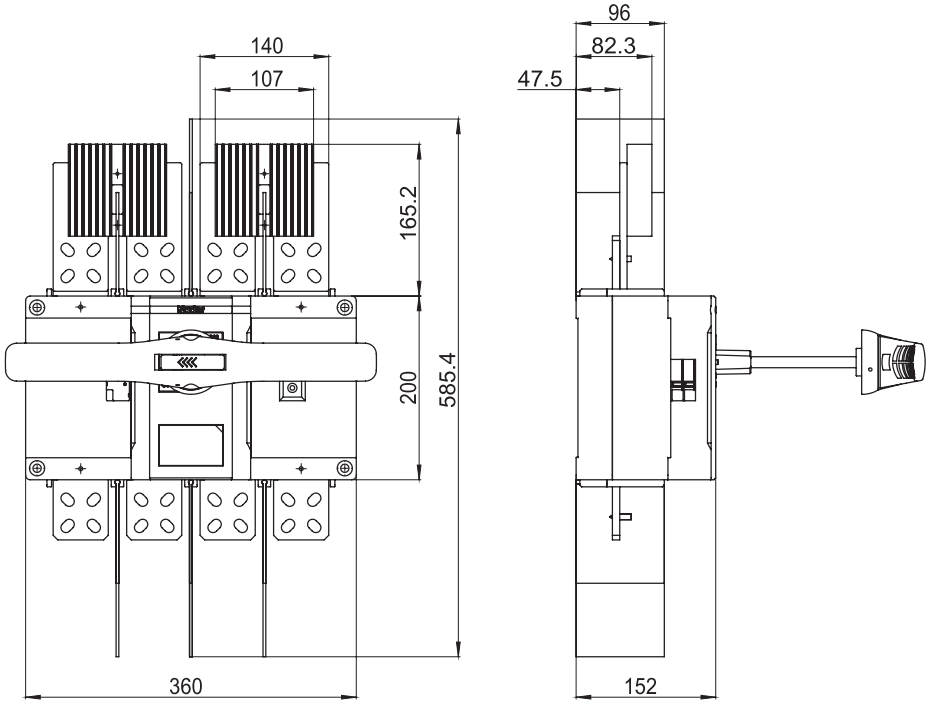


6.2. Product body + accessory size

6.2.1 NDG3-500/630/800 phase-to-phase bonding outline and installation dimensions



6.2.2 NDG3-1000/1250 phase-to-phase bonding outline and installation dimensions



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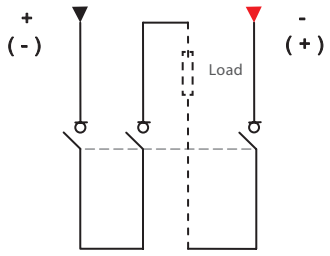
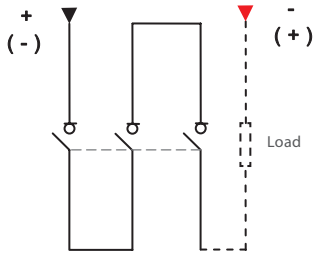
7. Electric circuit diagram

7.1 Three-pole series connection method

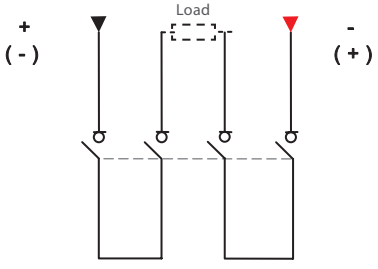


Common wiring

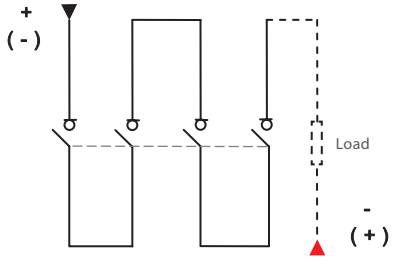


Optional wiring

7.2 Four-pole series connection method



Common wiring



Optional wiring

8. Specifications for ordering or selection

Ordering specifications (Please tick √ in □. See the Operating Instructions for details.)			
User unit		Number of units ordered:	Date of order:
Frame grade	□NDG3-500 □NDG3-630 □NDG3-800 □NDG3-1000 □ NDG3-1250		
Number of poles	□3--3 poles □4--4 poles		
Current Type	□ No code : Conventional product □ Z : DC photovoltaic products		

Note : The accessories must be ordered separately. For details, see “Configuration of standard accessories”.

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