

**Shanghai Liangxin Electric Appliance Co., Ltd.**

**(NDGR2-160 disconnecter)**

# Product specification

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

Authorized	Fan Cong	Date	2023.09.26
Check	Liu Donghui	Date	2023.09.27
Countersign	Guo Xiaoming	Date	2023.09.28
Approve	Hu Qi	Date	2023.09.28

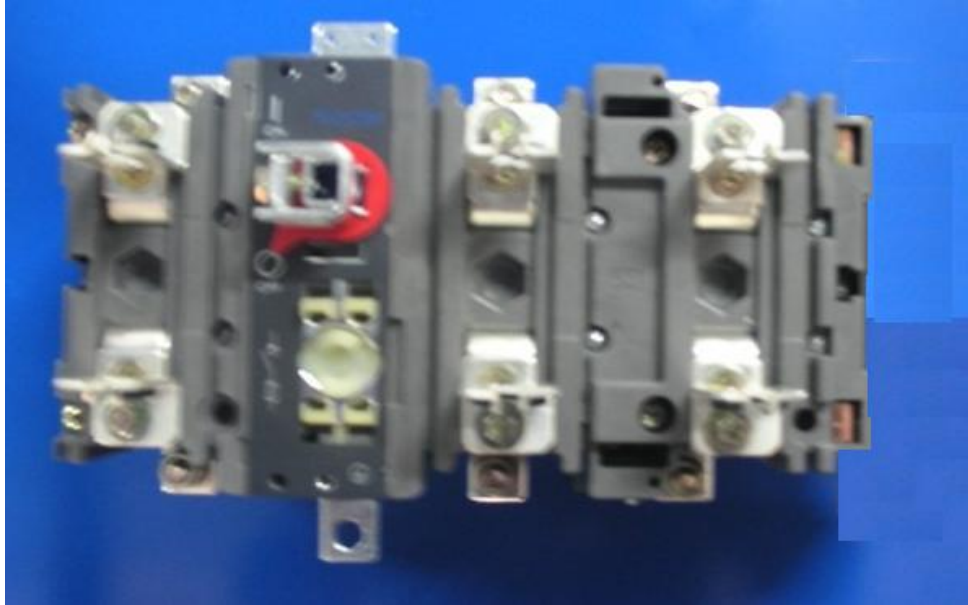
Revision record					
version	Reason/content of revision	date of enforcement	Compiler	Reviewer	approver
0	Add	2011-10-20	Li Xingwei	Ding Guohui	Li Shengai
1	Modification of shape and installation size	2012-06-01	Yu Jinzhen	Ding Guohui	Li Shengai
2	Merge specifications of 3 poles and 4 poles.	2018-11-26	Zhang Jiazheng	Wang Jili	Zhou Bo
3	Update product dimension.	2019-06-30	Jiang Zhaoyong	Zheng Lei	Wang Jili
4	Update product dimension and handle padlock status dimension.	2023-09-26	Fan Cong	Liu Donghui	Hu Qi

## 1、 Scope of application and use

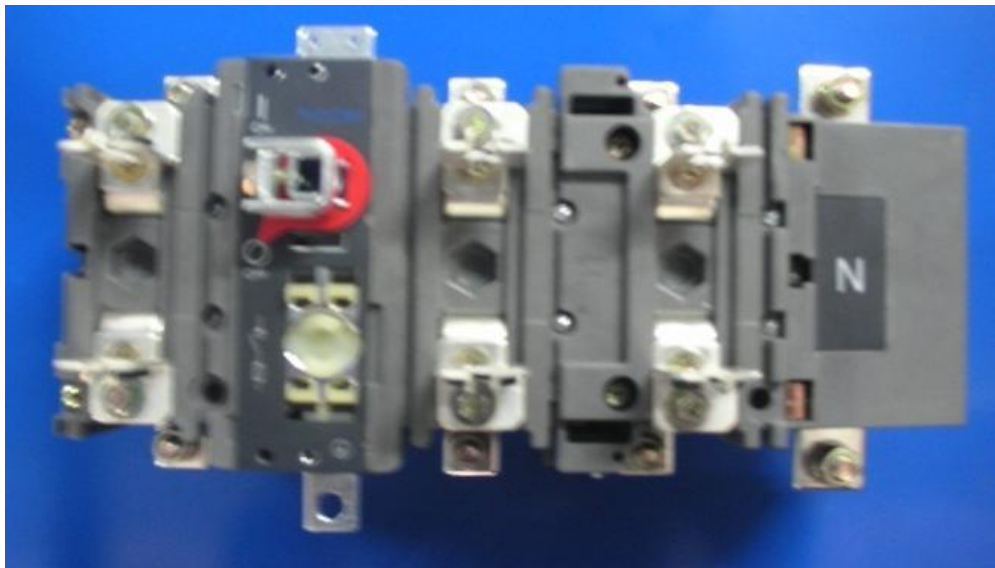
NDGR2-160 disconnecter fuse set is suitable for low-voltage power distribution or motor network with AC 50Hz, rated working voltage of AC400V and AC690V and rated working current of 160A, and is used for isolating circuits and lines that are not frequently connected and disconnected. It can provide short circuit and overload protection functions.

Products are widely used in power transmission and distribution and automation systems in construction, electric power, chemical industry and other industries.

## 2, product pictures



NDGR2-160/3



NDGR2-160/4

### 3. Description of specifications and models

ND GR 2 - 160 / □ / □(□ +□ +□)								
1	2	3	4	5	6	7	8	9
serial number	Serial number description					Model meaning		
1	Enterprise code					ND		
2	model					GR: disconnecter fuse set		
3	Design serial number					2		
4	specifications					160A		
5	number of poles					3: three poles, 4: four poles		
6	Auxiliary switch form					No code: without auxiliary switch F1: with an auxiliary switch (normally open and normally closed) F2: with two auxiliary switches (two normally open and two normally closed)		
7	Handle type					Inside the cabinet: inside the cabinet handle H-shaped: H-shaped handle H-type+interlock: H-type handle with door interlock function Type B: Type B handle with door interlocking function.		
8	Axial length type					L, L1, L2 (see overall installation dimensions for specific length)		
9	Fuse body specification					Specific size and current specification are selected according to customer's needs.		

### 4. Main technical parameters

#### (1) Electrical characteristics

- ▲ Rated isolation voltage  $U_i$ : 1000V V.
- ▲ Rated working voltage  $U_E$ : AC 400 V, AC690V V.
- ▲ Rated impulse voltage  $U_{imp}$ : 12kV
- ▲ Rated working current  $I_e$  (A)/ power AC ( $\cos \phi = 0.45$ )  
400V AC-23B A/kW 160/90  
690V AC-23B A/kW 160/150
- ▲ With fuse link size 00
- ▲ Maximum fuse link 160A
- ▲ Rated connection capacity 690V AC-23B 1600A
- ▲ Rated breaking capacity 690V AC-23B 1280A
- ▲ Rated on-off capacitive load capacity is 400V V. 251kVAr
- ▲ When rated limiting short-circuit current is 400V, 100kA
- ▲ When rated limiting short-circuit current is 690V, 50kA
- ▲ Allowable load  
When the ambient temperature is 40℃ 160A  
When the ambient temperature is 45℃ 150A  
When the ambient temperature is 50℃ 145A  
When the ambient temperature is 55℃ 140A
- ▲ Auxiliary switch 380V AC-15 4A
- ▲ Auxiliary switch 220V DC-13 0.4A

## (2) Operating performance

- ▲ Electrical life: 300 times
- ▲ Mechanical life: 12,000 times
- ▲ Operating torque 16Nm

## (3) Connection ability

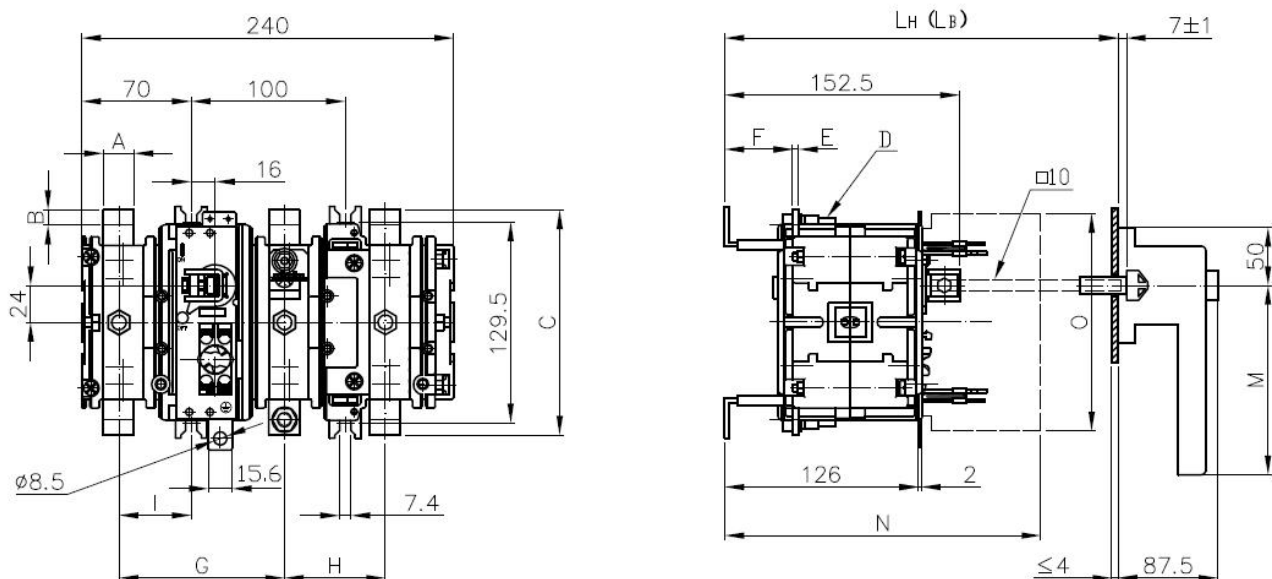
Rated current (a)	160
Minimum copper cable cross section (mm <sup>2</sup> )	120
Maximum copper cable cross section (mm <sup>2</sup> )	40×16
Maximum copper cable width (mm)	20
Terminal tightening torque (Nm)	15-22

## 5. Normal working environment

- ▲ Altitude: ≤ 2000m;
- ▲ Ambient temperature: -25℃ ~ +55℃; And the 24-hour average value does not exceed +35℃, and the volume reduction should be considered when the ambient temperature is higher than 40℃;
- ▲ Pollution level 3;
- ▲ When the highest temperature is +40℃, the relative humidity of the air does not exceed 50%, and higher relative humidity can be allowed at lower temperatures, for example, it can reach 90% at +20℃. Special measures should be taken for the occasional condensation due to temperature changes;
- ▲ Installation categories III and IV:
- ▲ It should be installed in a place where there is no obvious shaking, impact vibration and rain and snow. At the same time, the installation site should be free of explosive dangerous media, and there is no gas and dust in the media that can corrode metals and destroy insulation.

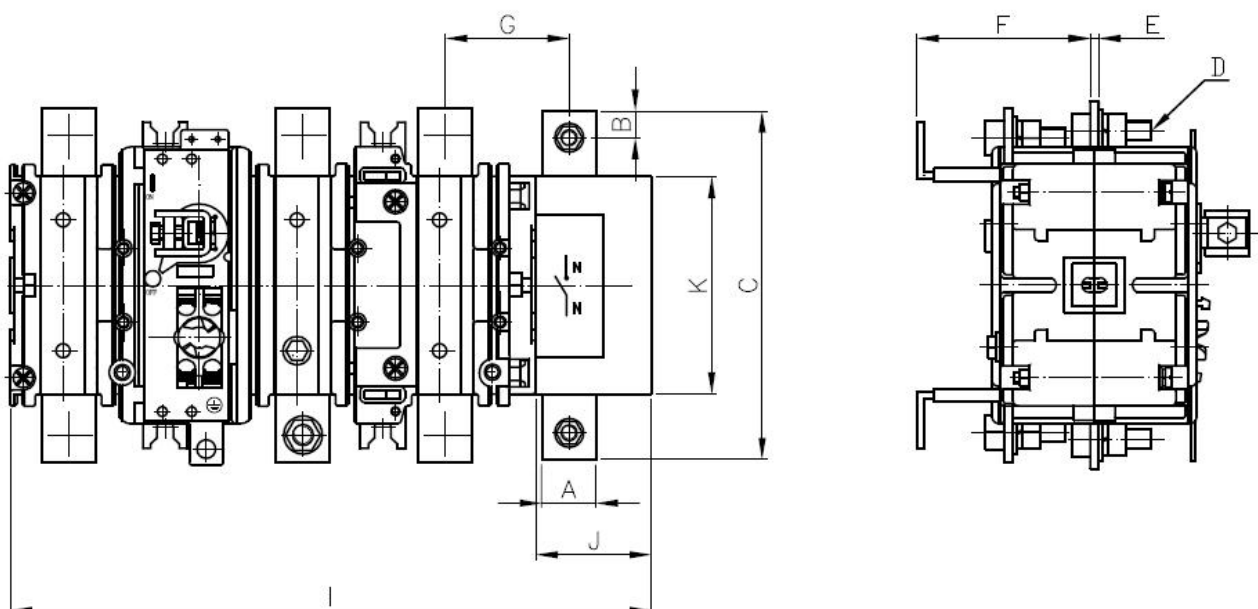
## 6, product appearance and installation size

Shape of 3-pole product and installation dimensions of handle outside the cabinet (H-type /B-type)



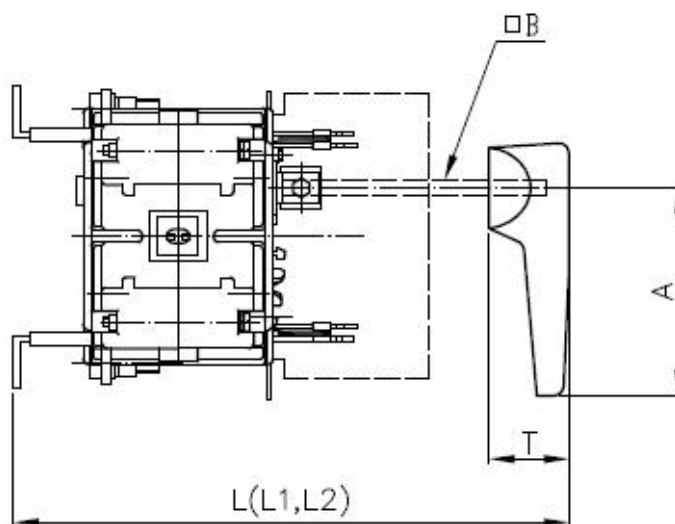
model	A	B	C	D	E	F	G	H	I	L*	L1*	M	N	O
NDGR2-160/3	20	10	146	M8	4	43	107	65	46	290	265	140	189	120

Dimensions of 4-pole products



model	A	B	C	D	E	F	G	I	J	K
NDGR2-160/4	25	10	146.2	M8	4	80	58.5	293	53	100

Installation dimensions in cabinet



model	L*	L1*	L2*	A	B	T
NDGR2-160	260~295	296~345	346~395	120	10	55

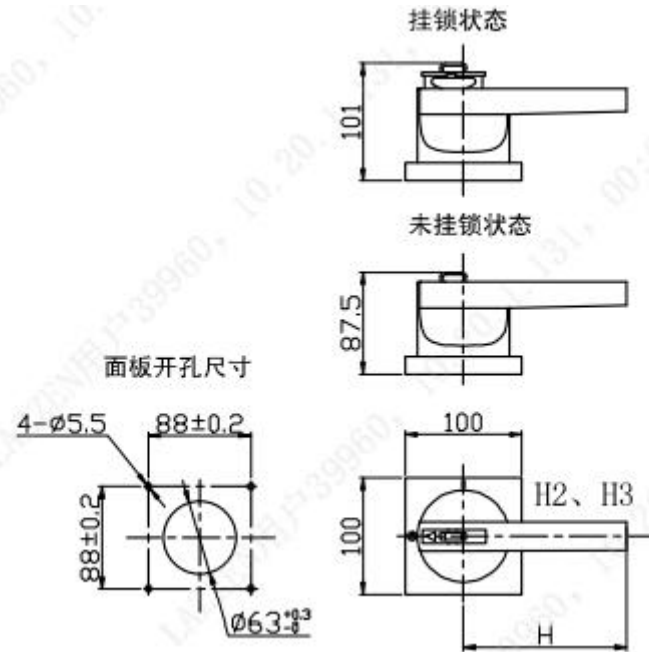
Note: 1. For the installation dimensions of the handle outside the cabinet (H type /B type),

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please refer to "3-pole product shape and installation dimensions of the handle outside the cabinet (H type /B type)".

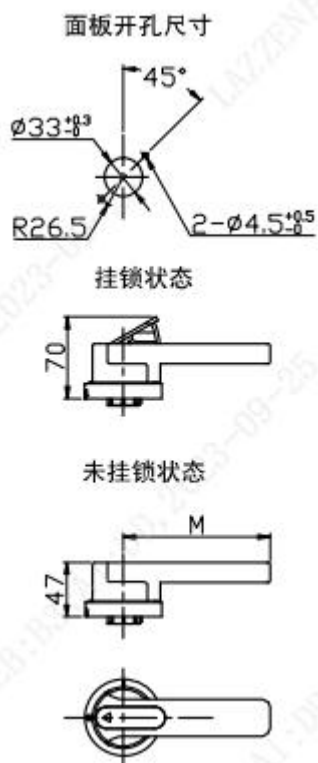
2. See "Installation Dimensions in Cabinet" for the installation dimensions of the handle in the cabinet.

### H-shaped handle size and mounting hole size



**Note: H=140 here.**

### B-type handle size and mounting hole size



Note: M=126 here.

## 7. Installation method

Vertical installation, wire feeding mode can be up and down, or down and up.

## 8. Packaging and storage

The storage temperature of products packed in boxes is  $-50^{\circ}\text{C}\sim+80^{\circ}\text{C}$ , and the products must not be attacked by rain during transportation.

## 9. Attachment List and Installation

List of accessories for H-handle

serial number	name	unit	quantity	remarks
1	axis	root	1	
2	Coupling (including screws)	set	1	
3	hand shan	set	1	
4	Self-tapping screw for fixing handle	individual	4	
5	Handle pad	piece	1	
6	Adjusting sample	piece	1	
7	H series handle instruction manual	basis	1	

List of accessories for type B handle

serial number	name	unit	quantity	remarks
1	axis	root	1	
2	hand shan	set	1	



3	Self-tapping screw for fixing handle	individual	2	
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## List of operating accessories in the cabinet

serial number	name	unit	quantity	remarks
1	hand shan	set	1	

## 10. Matters needing attention

- ▲ The default standard handle of the product is H-series handle. If B-series handle or cabinet handle is needed, it should be noted that H-series handle and B-series handle can be padlocked, but the cabinet handle has no padlock function.
- ▲ If the required installation depth is beyond the normal given range, the required installation depth should be indicated.