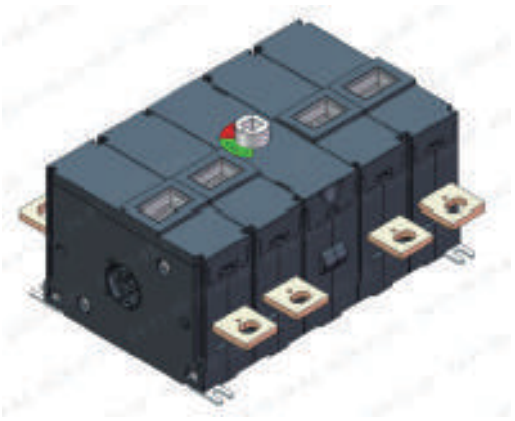
HCG4-1200 DC Disconnect Switch specification



1.1 Scope of application

This HCG4-1200 Series DC Disconnecting Switch meets UL98B, is suitable for DC systems with a rated operating voltage of DC1,500 V and below and a rated operating current of 1200 A and below, providing functions of main circuit connection, breaking, and isolation. Typical application scenarios include electrochemical energy storage, large-scale photovoltaics, DC data centers, and DC distribution.

1.2 Standards UL98B

c UL us LISTED E544157

Type selection specifications:

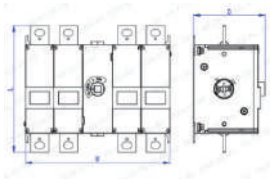
HCG4-1200 / 1200 / 1500 / 2 / F4 / W/11/Y41/L200 / V / B / □

1 2 3 4 5 6 7 8 9 10 11 12

S/N	Name	Specification and type code	Notes
1	Product type	☐HCG4-1200	
2	Rated current (A)	☐600 ☐700 ☐800 ☐1000 ☐1200	
3	Rated voltage (Vdc)	☐1500	
4	poles	☐2	
5	Auxiliary contact	☐F0 — No auxiliary contact, ☐F1 — 1 group of auxiliary contacts, ☐F2 — 2 groups of auxiliary contacts, ☐F3 — 3 groups of auxiliary contacts, ☐F4 — 4 groups of auxiliary contacts	
6	Operation mode code	☐ N: front operation in the cabinet (standard configuration:Y43 handle inside the cabinet) ☐ W: front operation outside the cabinet (optional: Y41 handle outside the cabinet)	
7	Position of mechanism	☐11: mechanism in the middle (no side operation)	
8	Handle	☐Y41-Y4 handle (IP65, outside the cabinet) ☐Y43-Y4 handle(inside the cabinet)	
9	Square shaft	☐L200-Square shaft length 200 in mm, ☐L320-Square shaft length 320 in mm, with other lengths customizable	directed against handle outside the cabinet
10	Foot	☐V-Vertical installation ☐H-Horizontal installation	
11	External bar	☐B: without external bar ☐K: with external bars	
12	Special customization code		

Catalogue

1.3 Main technical parameters

Model			HCG4-1200
Number of poles (P)			2
Rated current Ie (A)			600, 700,800,1000,1200
Rated operating current Ue (V)			DC1500
Rated insulation voltage Ui (V)			DC1500
Rated impulse withstand voltage Uimp (kV)			12
Rated short-time withstand current Icw			20kA/1s,63kA/0.1s
Rated short-circuit making current Icm			20kA
Operating performance	**Mechanical durability**	Maintenance-free	10000 cycles
	Electrical durability	DC1500V	400 cycles
	**Overall dimensions L × W × D (mm)**		200×227×112.5
Weight (kg)			5.3
Accessories			handle/square shaft/install fasteners
Operation mode			Forward operation

Chapter 2 Scope of Application

2.1Operating environment

2.1.1 Ambient temperature

Applicable ambient temperature: -40°C to +70°C; average temperature within 24 h: not higher than +35°C.

Storage conditions: ambient air temperature of -40°C to +80°C.

If the temperature is higher than 55°C, the capacity reduction shall be considered.

Table 1

Ambient temperature	+55℃	+60℃	+65℃	+70℃
Operating current correction coefficient	1	0.963	0.915	0.89

2.1.2 Atmospheric environmental conditions

The relative humidity of atmosphere shall not exceed 50% at a maximum temperature of+40°C. A higher relative humidity is allowed at a lower temperature. For example, the relative humidity of atmosphere may be 90% at +25°C. Dehumidification or corresponding measures shall be taken for condensation caused by temperature changes.

2.1.3 Altitude

The altitude shall be ≤ 2,000 m. When the altitude is higher than 2,000 m, the product parameters can be corrected with reference to the following table.

Table 2

Altitude (m)	2000	3000	4000	5000
Power frequency withstand voltage (V)	5500	4867	4297	3820
Rated impulse withstand voltage	12	10	9	8

(kV)				
Insulation voltage (V)	1500	1500	1500	1500
Maximum service voltage DC (V)	1500	1500	1500	1500
Operating current correction coefficient	1	0.96	0.93	0.9

2.2 Corrosion resistance grade

Salt spray: severity level 2 specified in GB/T 2423.18

2.3 Pollution grade

Pollution grade: Grade 3 specified in GB/T 16935.1

2.4 Shockproof requirements

◆ This disconnecting switch can be used for mechanical conditions of Grade 3M3 specified in GB/T 4798.3. It has passed the tests specified in GB/T 2423.10.

◆ Amplitude: ±1.5 mm (2 Hz - 9 Hz)

◆ Constant acceleration: 5 m/s^2 (9 Hz - 200 Hz)

2.5 Installation conditions

The disconnecting switch shall be installed in the environment without explosion hazard, conductive dust, metal corrosion and insulation failure;

2.6 Protection rating

The protection rating shall be IP20 for complete machine and IP65 for handle outside the cabinet.

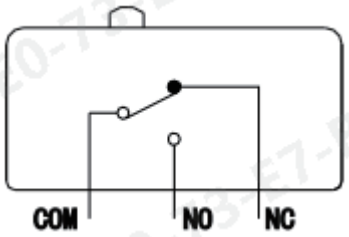
Chapter 3 Accessories

3.1 Auxiliary contact

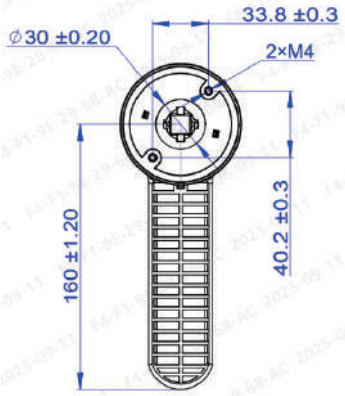
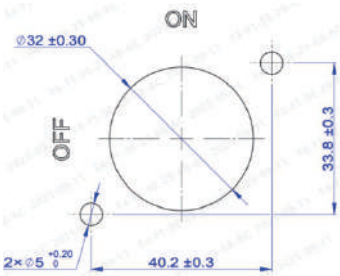
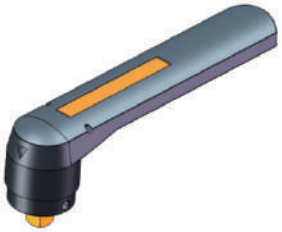
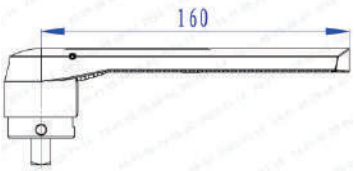
3.1.1 Technical parameters of auxiliary contact

	Conventional heating current (A)	5
	Rated insulation voltage Ui (V)	250
	Rated impulse withstand voltage Uimp (kV)	2.5
	Capacity	Ue/ Ie: AC125V/5A; 250V/3A
	Length of the wire(mm)	650±10

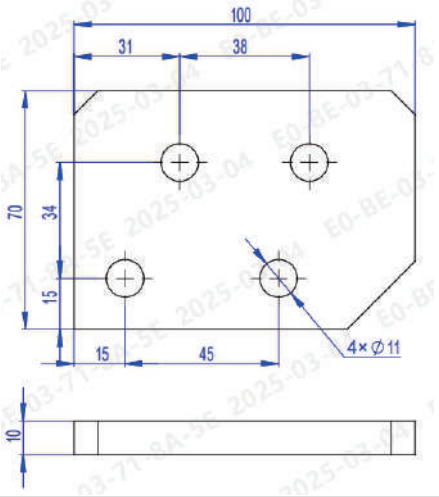
3.1.2 Wiring diagram of auxiliary contact

Wiring diagram	1NO, 1NC	
Note：Color of wire marker sleeves：NC is red, NO is yellow, COM is white.		

3.2 Handle

Picture of handle outside the cabinet		Outline dimension drawing	Installation drawing of panel opening
Y41 handle (outside the cabinet, IP65)			
Y43 handle（inside the cabinet，IP00）			Installed on the product body directly
Note: The default square shaft length is 200 mm, and other specifications need to be customized.			

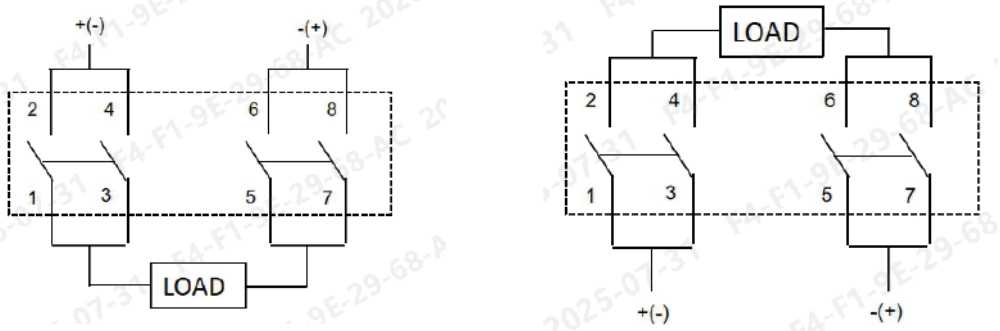
3.3 External bar

External bar picture	Outline dimension drawing
	
Note: The dimension of external bar can be customized.	

Chapter 4 Wiring Mode, Outline, and Installation Dimensions

4.1 Wiring mode

Adjacent two poles parallel connection to form one pole, and then connect in series to form a circuit.



4.2 Outline and installation dimensions

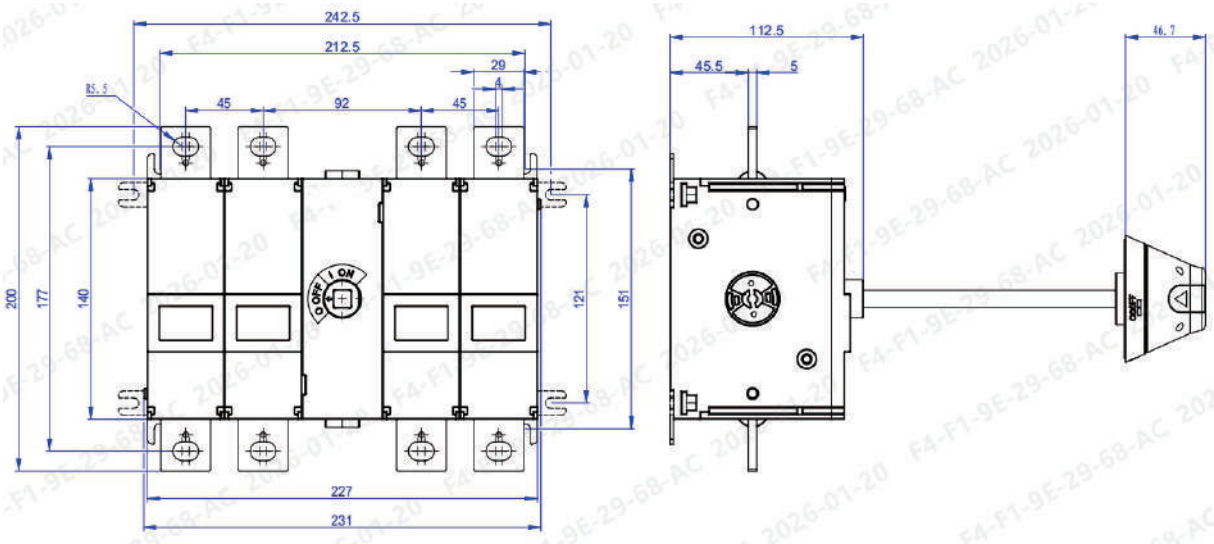


Fig. 1 Outline Dimensions of Front Handle Outside the Cabinet

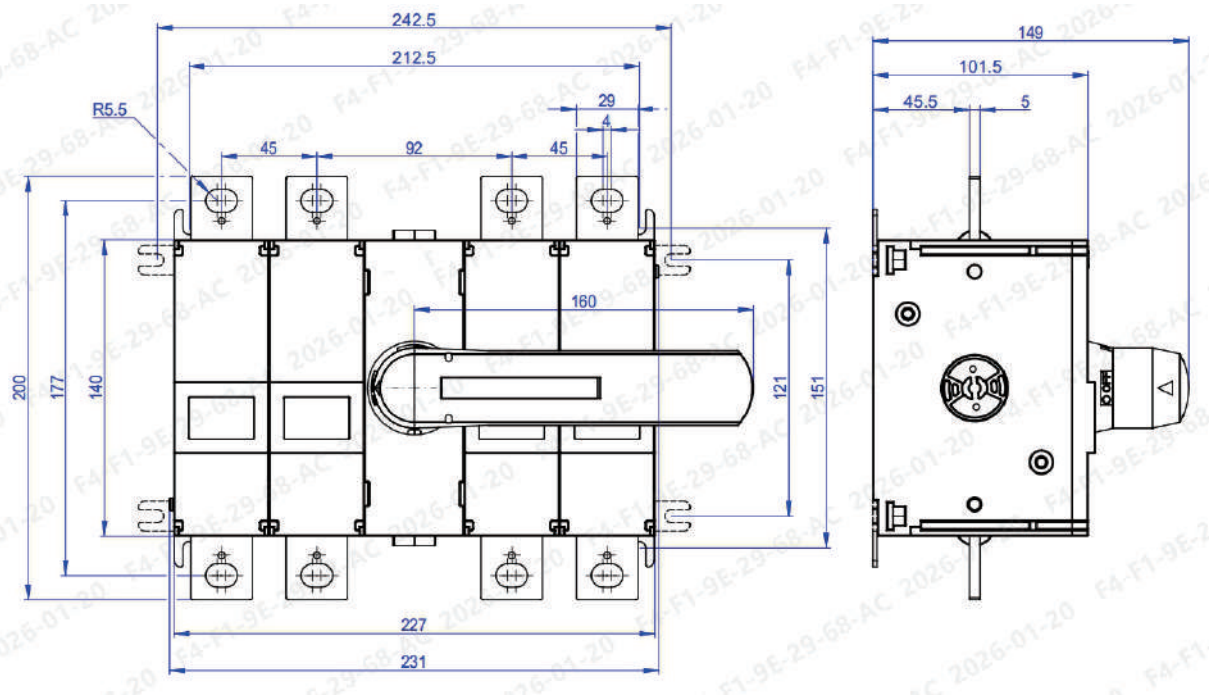
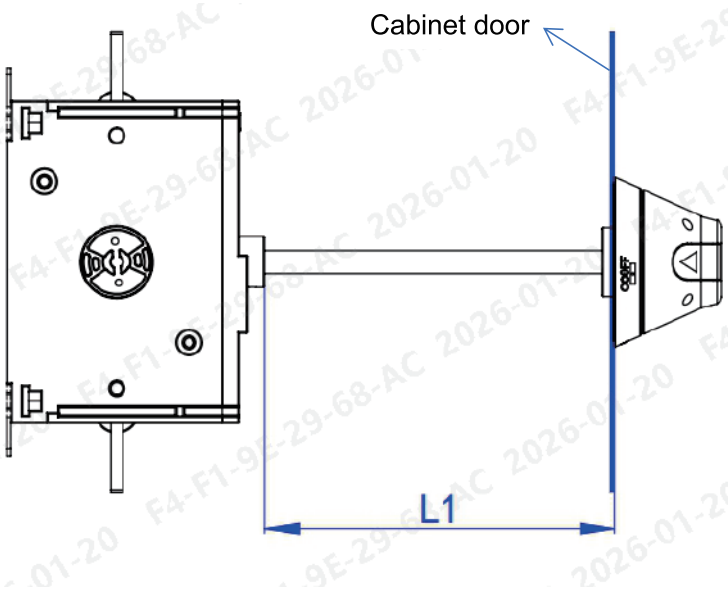


Fig. 2 Outline Dimensions of Front Handle Inside the Cabinet Note:All dimensions without specified tolerances

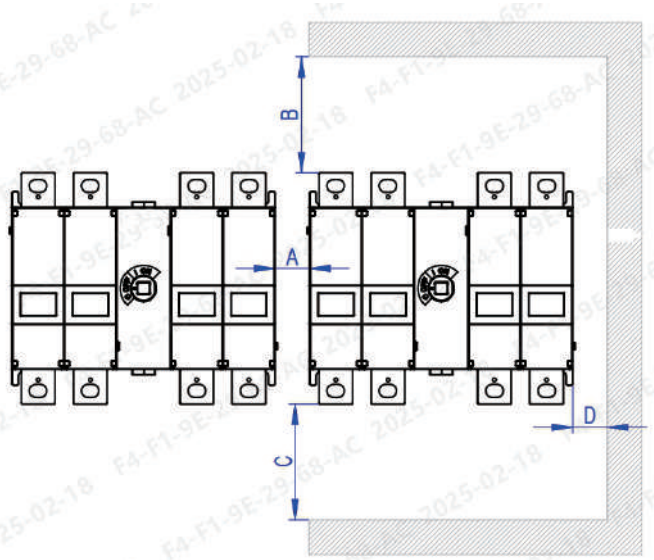
Dimensions segmentation（mm）	0.5～6	＞6～30	＞30～120	＞120～400
Tolerance（mm）	±0.1	±0.2	±0.3	±0.5

4.3 The calculation method of customized shaft length



Shaft length : L=L1+47.5mm ±0.5mm

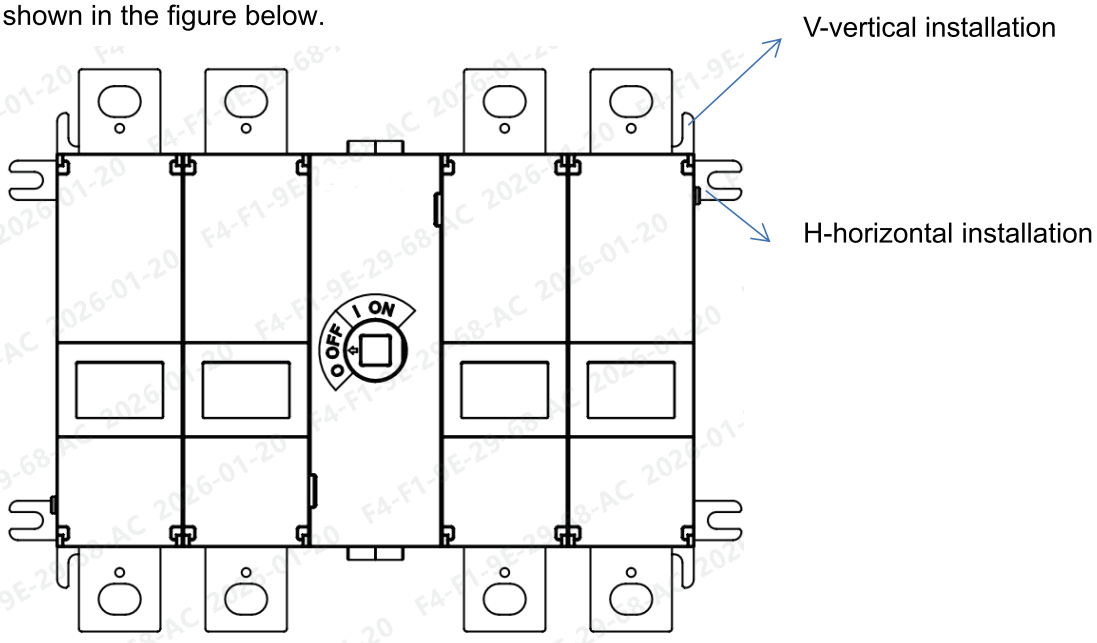
4.4 Safe distance



Safe distance	Without hood
A (mm)	≥30
B (mm)	≥100
C (mm)	≥100
D (mm)	≥30

4.5 Installation direction

There are 2 directions for foot installation angle:V-vertical installation 、H-horizontal installation，as shown in the figure below.



4.6 Requirements for connecting copper bars of disconnecting switch

Rated current (A)	Copper wires/ bars specifications	
	Number of wires/bars	AWG
600	3	300
700	3	400
800	3	500
1000	4	400
1200	5	400

4.7 Recommended tightening torque for mounting screws

Screw specifications	Application	Tightening torque (N·m)
M4	Fixing and installation of handle	2
M5	Fixation and installation of product anchor	4
M10	Tightening of wiring terminal	36