

Distribution Apparatus

YCW8-□HU Air circuit breaker



General

YCW8-□HU series air circuit breaker (hereinafter called ACB) is suitable for the circuit of AC 50Hz/60Hz with rated service voltage 800V, 1140V and rated service current between 630A and 4000A. It is mainly used to distribute electric energy and protect circuits and electric equipment against over-load, under-voltage, short-circuit and single-phase earthing fault.

With intelligent and selective protection functions, the breaker can improve the reliability of power supply, and avoid unnecessary power failure. The breaker is applicable for power stations, factories.

Standard: IEC 60947-2, IEC 60947-4-1

Type designation

product name	Shell frame current	Breaking Capacity	number of poles	Rated current	Installation type	Connection	controller type
YCW8	2500(630~2500A) 4000(2000~4000A)	HU : AC800 /1140V	3:3P 4:4P	630 800 1000 1250 1600 2000 2500 2900 3200 3600 3900 4000	D: Drawer style F: Fixed	H: Horizontal wiring V: Vertical wiring	M: LED display 3M: LCD display 3H: LCD display with communication

Operating conditions

Item	Description
Ambient temperature	-5°C~+40°C; the average value within 24h shall not exceed +35°C; L type and M type controller can be used under -40°C~+70°C
Altitude	≤2000m
Pollution grade	3
Safety category	Main circuit and undervoltage tripping coil is IV, other auxiliary and control circuit is III
Installation position	Vertically installed, inclination between the mounting plane and the vertical plane should not exceed ±5°

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Technical data

Item	Description	
Shell current Inm (A)	2500	4000
Rated working current In (A)	630,800,1000 1250,1600,2000,2500	2000, 2500, 2900, 3200, 3600, 3900, 4000
Rated working voltage Ue (V)	800/1140	
Rated insulation voltage Ui (V)	1140	
Rated impulse withstand voltage Uimp (KV)	12	
Power frequency withstand voltage (V) for 1 minute	3500	
Number of poles	3P,4P	
Rated limit short breaking capacity Icu (KA)	800/1140V	50
Rated operating short-circuit breaking capacity Ics (KA)	800/1140V	50
Rated short time withstand current for 1s ICW (KA)	800/1140V	50
Full power interruption time (without additional delay) (ms)	12~18	
Closing time (ms)	≤60	
Electrical lifespan	2000	
Mechanical life (maintenance free)	10000	
Mechanical life (with maintenance)	20000	

Basic and optional functions of the controller



M-type digital display

Basic function	Optional function
Overload long delay, short circuit short delay, and short circuit instantaneous protection	Signal contact output
Functional testing	MCR and over limit tripping
Fault memory	Load monitoring
Thermal memory	Voltage measurement
Self diagnosis	
Current measurement	
Fault status indication and numerical display	
Earth fault protection	

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3M/3H type digital display

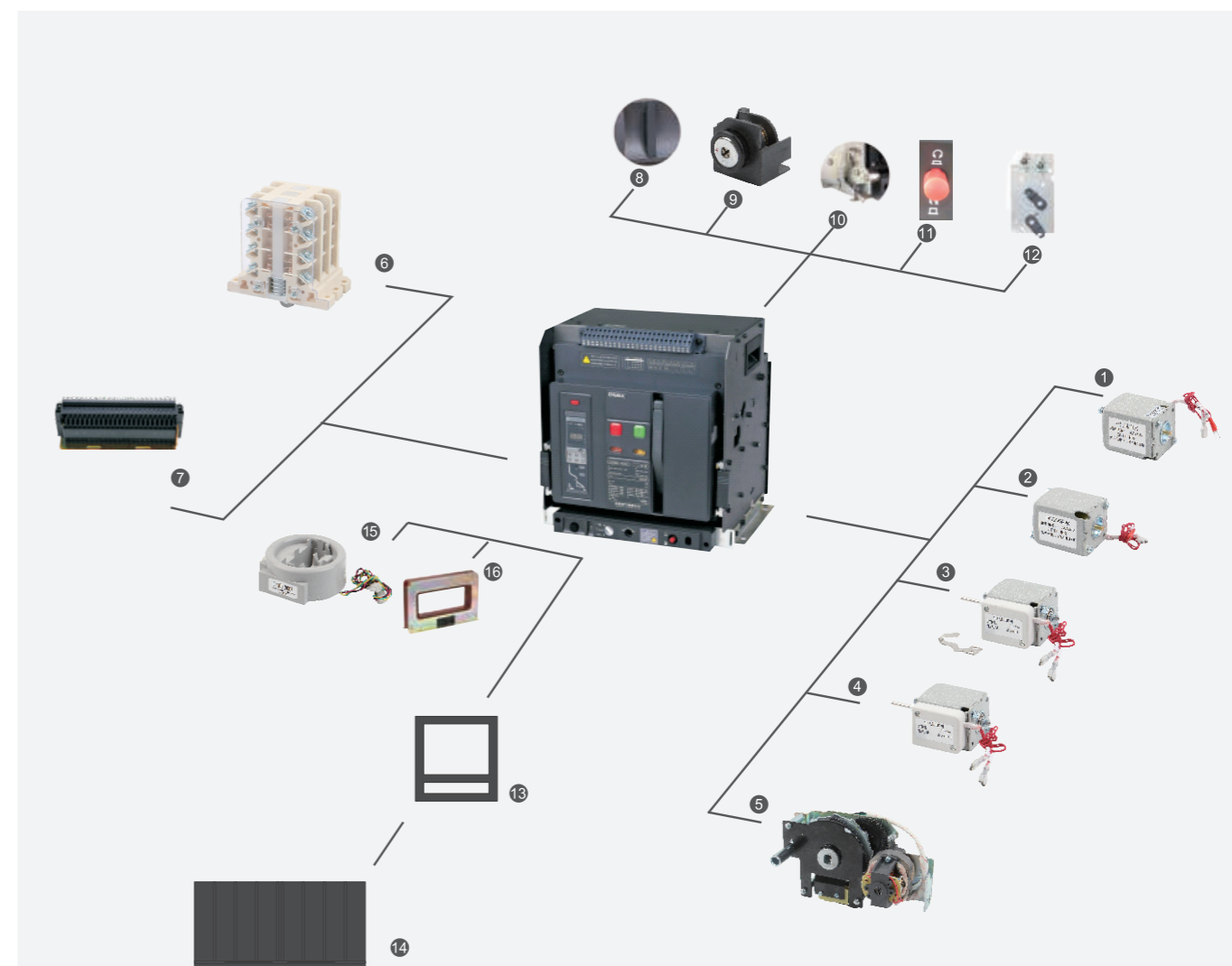
Basic function	Optional function
Overload long delay, short circuit short delay, and short circuit instantaneous protection	Current imbalance protection
Functional testing	Signal contact output
Fault memory	MCR and over limit tripping
Thermal memory	Load monitoring
Self diagnosis	power measurement
Current measurement	Power factor measurement
Fault status indication and numerical display	Electric energy measurement
Communication function (3H)	Regional interlocking
Contact wear indicator (3H)	Harmonic measurement
Operation fault protection record (3H)	Voltage protection
Earth fault protection	Voltage measurement

Controller model	M	3M	3H
Overload long delay protection	■	■	■
Short circuit short time delay protection	■	■	■
Short circuit instantaneous protection	■	■	■
Earth fault protection	■	■	■
Current imbalance protection	-	□	□
Functional testing	■	■	■
Fault memory	■	■	■
Signal contact output	□	□	■
Thermal memory	■	■	■
Self diagnosis	■	■	■
MCU working instructions	-	-	-
Current column display	-	-	-
Current measurement	■	■	■
MCR and over limit tripping	□	□	□
Load monitoring	□	□	□
Fault status indication and numerical display	■	■	■
Voltage measurement	□	□	■
Power factor measurement	-	□	■
power measurement	-	□	□
Electric energy measurement	-	□	□
Communication function	-	□	■
Contact wear indication	-	□	■
Regional interlocking	-	□	□
Harmonic measurement	-	□	□
Voltage protection	-	□	□
Record of operation times	-	□	■

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Accessories



Remote operation

- ① shunt release
- ② closing electromagnet
- ③ under-voltage release instantaneous type
- ④ under-voltage release time-delay type
- ⑤ motor-driven energy-storage mechanism

Lock and connection

- ⑧ padlock
- ⑨ key lock
- ⑩ door interlock
- ⑪ connected, disconnected, test position locking mechanism
- ⑫ mechanical interlock

Indication contact

- ⑥ auxiliary contact
- ⑦ secondary wiring terminal

Operation and protection

- ⑬ phases barrier
- ⑭ doorcase

Current transformer

- ⑮ external N-pole transformer
- ⑯ leakage current transformer
- ⑰ earthing current transformer

Accessories of YCW8

**Shunt release**

Shunt release can realize the remote control to break the circuit breaker.

- rated control power voltage $U_s(V)$ AC220V/230V, AC380V/400V, DC220V, DC110V
- work voltage (0.7~1.1) U_s
- breaking time (50±10)ms

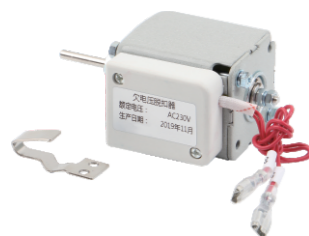
Forbid making the power for long time to avoid the shunt release being damaged.

**Closing electromagnet**

After the motor finishes the energy storage, closing release can instantly close the circuit breaker.

- rated control power voltage $U_s(V)$ AC220V/230V, AC380V/400V, DC220V, DC110V
- work voltage (0.85~1.1) U_s
- closing time (55±10)ms

Forbid making the power for long time to avoid the closing release being damaged.

**Under-voltage release**

Without power supply, under-voltage release can't close.

It is classified into instantaneous and time-delay type.

After closing the circuit breaker, under-voltage release can break the circuit breaker when the voltage drops to (70%~35%) U_s . The circuit breaker can be closed again when power voltage recovers and exceeds 85% U_s .

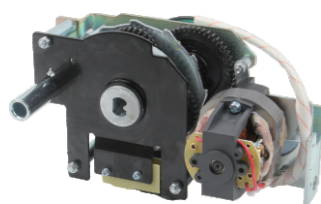
- rated control power voltage $U_s(V)$ AC220V/230V, AC380V/400V
- action voltage (0.35~0.7) U_s
- reliable making voltage (0.85~1.1) U_s
- reliable non-making voltage $\leq 0.35U_s$
- delay time: 0.5s, 1s, 1.5s, 3s (YCW3-1600, non-adjustable);
0.5s, 1s, 3s, 5s (YCW3-2000A, 3200A, 4000A, 6300A, adjustable).

Make sure there is power supply on the under-voltage release before making the circuit breaker.

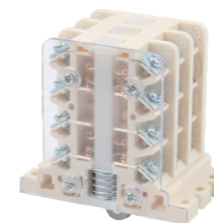
Motor-driven energy-storage mechanism

With the function of motor-driven storing and auto restoring energy after closing the circuit breaker, the mechanism can ensure to close the circuit breaker instantly after breaking the circuit breaker.

- rated control power voltage $U_s(V)$ AC220V/230V, AC380V/400V, DC220V, DC110V
- work voltage (0.85~1.1) U_s
- power loss 75W(1600A), 85W(2000A), 110W(3200A, 4000A), 150W(6300A)
- energy-storage time <5s



Auxiliary contact



Standard model: 4NO/4NC

For YCW3-2500,4000: 4NO/4NC, 4NO+4NC, 2NO+6NC, 3NO+3NC.

Ith: AC380V/AC400V 0.75A, DC220V 0.15A, AC220V/AC230V 1.3A.

Lock

Key lock

The OFF button of the circuit breaker can be locked in the depressed position and the circuit breaker cannot be closed in that case; when the user selects the option, the factory provides locks and keys; One breaker is provided with one lock and one key for the lock; two breakers are provided with two locks and one key for the locks; three breakers are provided with three same locks and two same keys for the locks.

Note: It is necessary to firstly press the OFF key and turn it anticlockwise before pulling out the key for the air circuit breaker with key lock equipped.

**"Disconnected" position locking device for the draw-out type**

For the "disconnected" position of the draw-out circuit breaker, a lock rod can be pulled out to lock the matter, and the breaker locked will be unable to be turned towards the TEST or CONNECTION position. Padlocks have to be provided by users themselves.

Three position locking device for the draw-out

It is the locking device for three positions(disconnected, test, connection) of draw-out type. Three positions of circuit breaker is indicated by the indicator, the driving and the reversing handle which is locked in the exact position, and the lock can be released by the reset button.

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Door-case



Installed on the door of the distribution cubicle, for sealing the distribution cubicle and making the protection class to IP40(fixed type and draw-out type).

Phases barrier (optional)



Installed between the bus-bars to increase the creepage distance.

Controller accessories



External N-pole transformer

In 3P+N system, it is used to measure N-pole current and fitted on the bus-bar by user.

Leakage current transformer

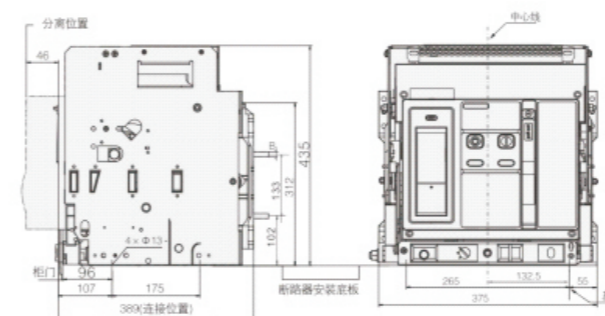
1. If the grounding protection is the leakage type, then a rectangular transformer will be needed.

Distribution Apparatus

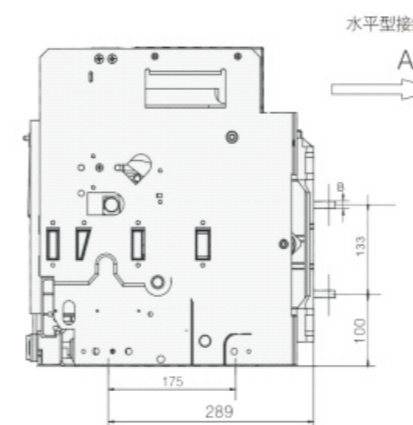
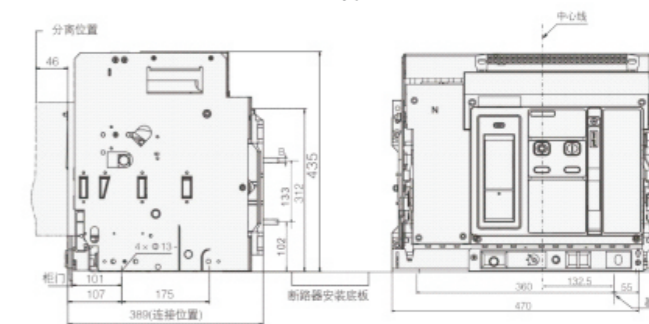
YCW8-□HU Air circuit breaker

Overall and mounting dimensions(mm)

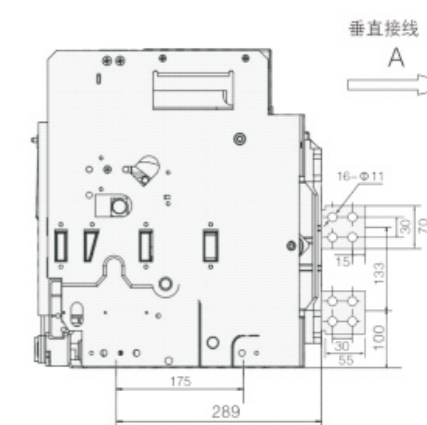
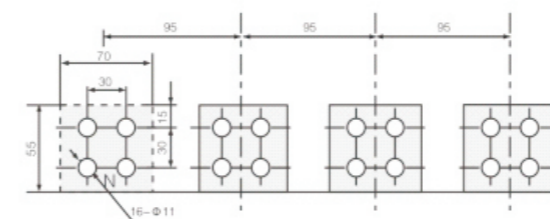
YCW8-2500HU 3P drawer type



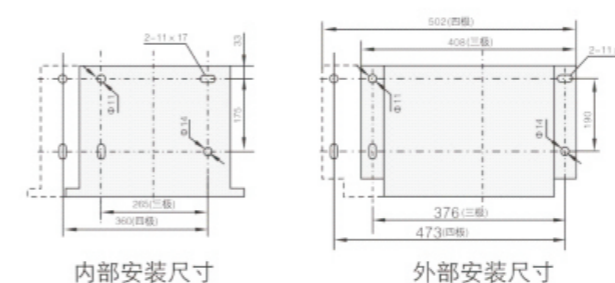
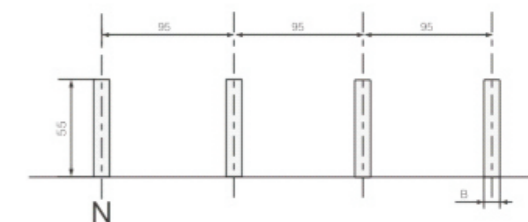
YCW8-2500HU 4P drawer type



◆标准型水平接线



◆垂直接线

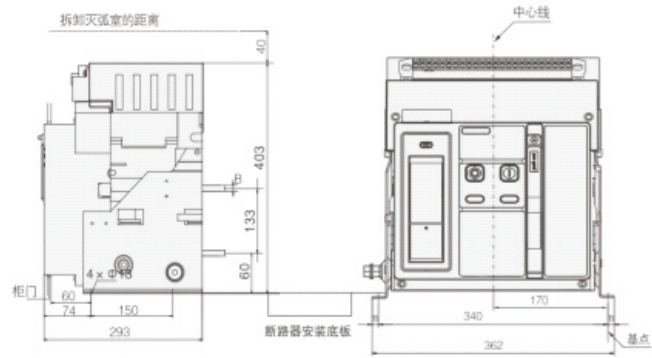


Rated current (A)	Dimension B (mm)
600~800	10
1000~1600	15
2000~2500	20

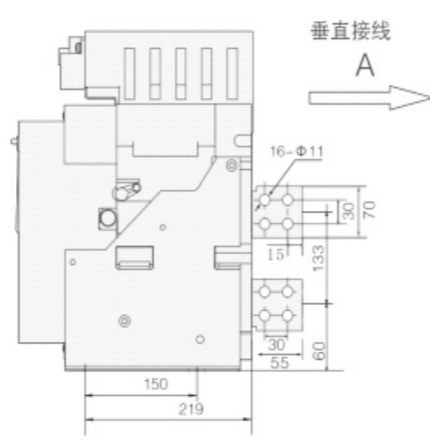
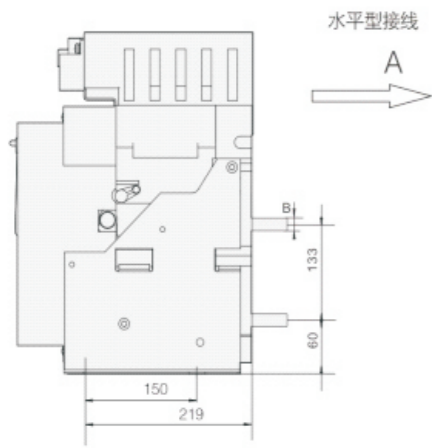
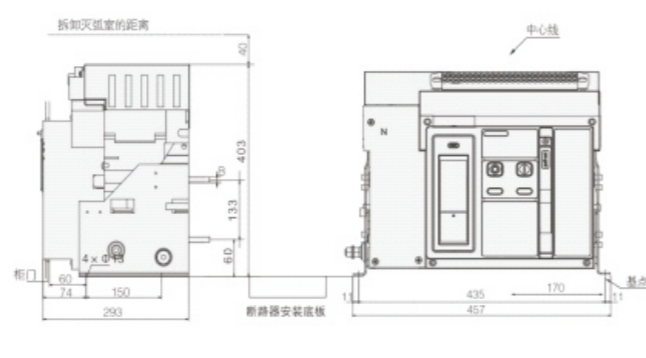
Distribution Apparatus

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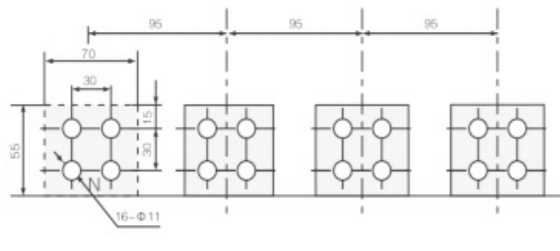
YCW8-2500HU 3P fixed type



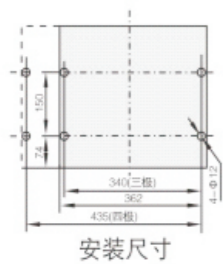
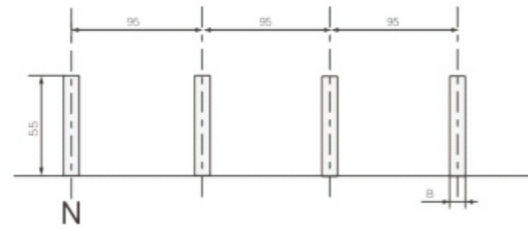
YCW8-2500HU 4P fixed type



◆标准型水平接线



◆垂直接线



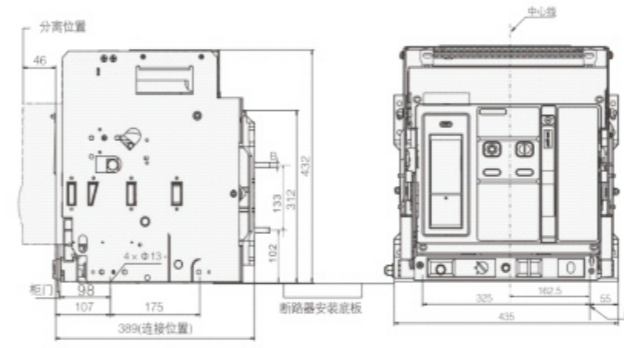
安装尺寸

Rated current (A)	Dimension B (mm)
630~800	10
1000~1600	15
2000~2500	20

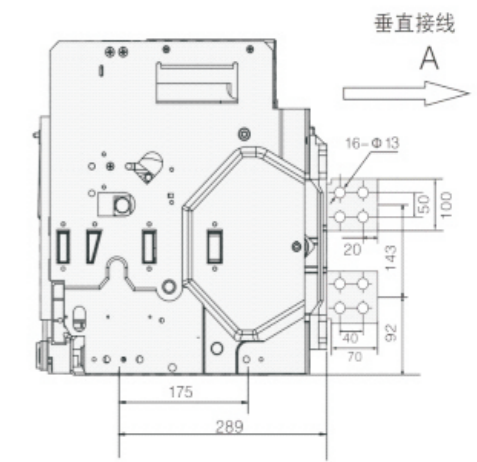
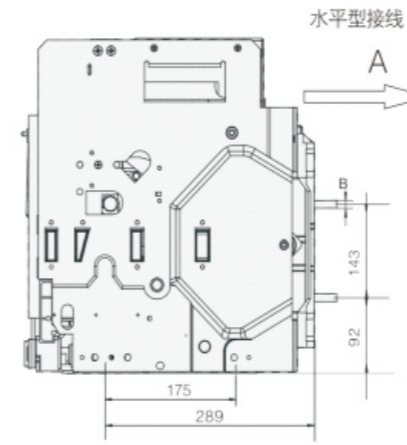
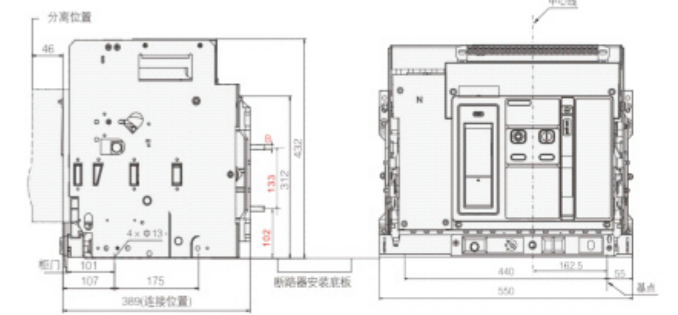
Distribution Apparatus

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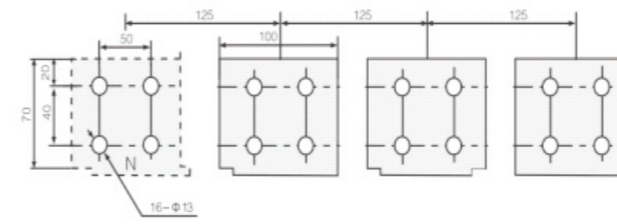
YCW8-4000HU 3P drawer type



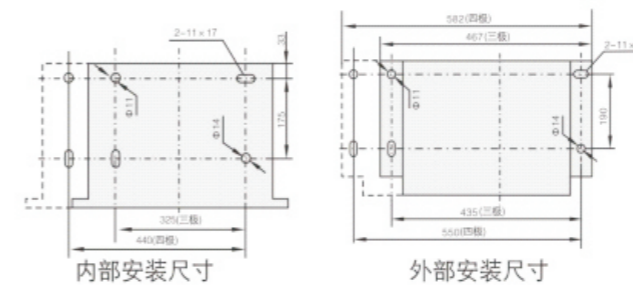
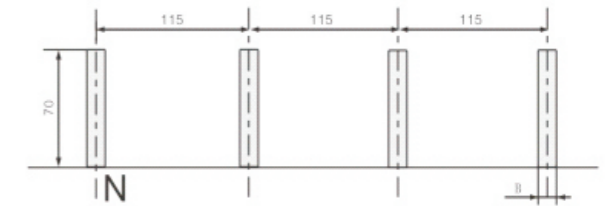
YCW8-4000HU 4P drawer type



◆标准型水平接线



◆垂直接线



内部安装尺寸

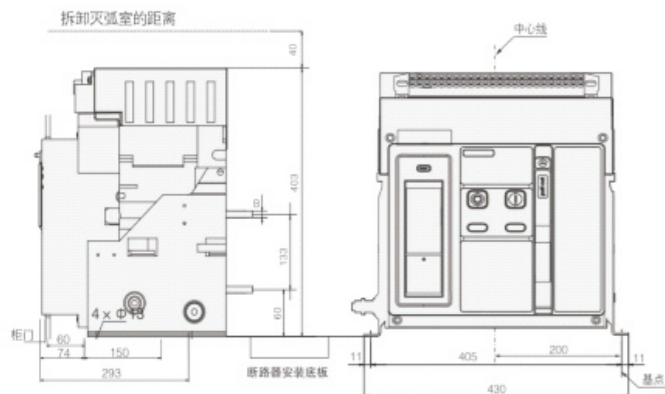
外部安装尺寸

Rated current (A)	Dimension B (mm)
2000,2500	20
2900,3200	30
3600,4000	

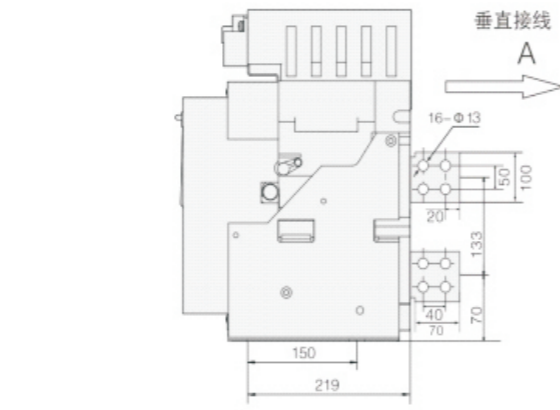
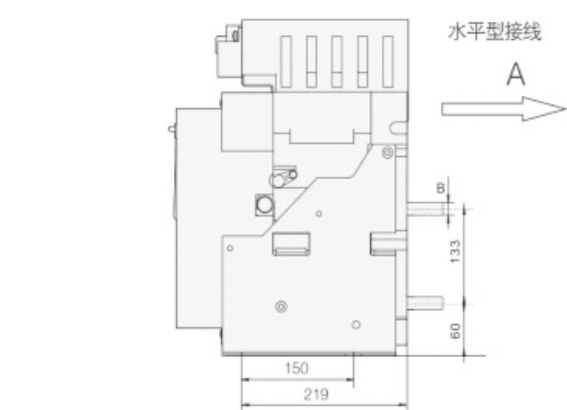
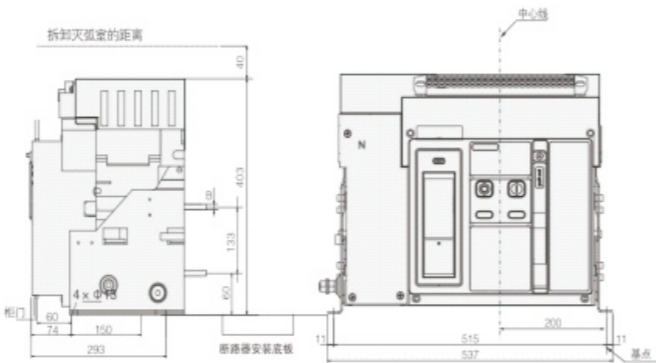
Distribution Apparatus

YCW8-□HU Air circuit breaker

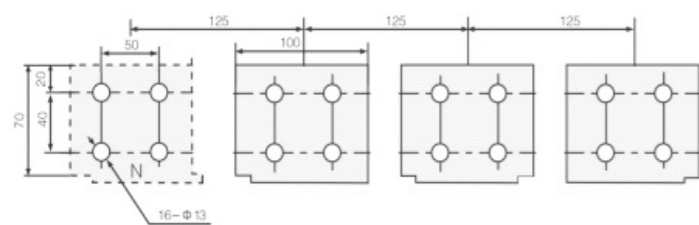
YCW8-4000HU 3P fixed type



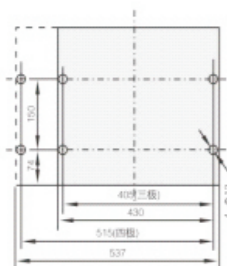
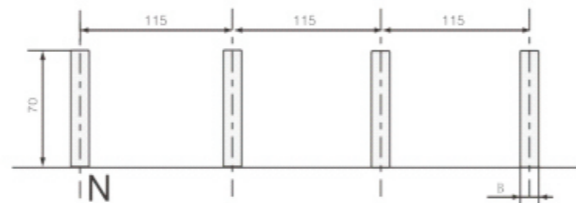
YCW8-4000HU 4P fixed type



◆标准型水平接线



◆垂直接线



安装尺寸

Rated current (A)	Dimension B (mm)
2000,2500	20
2900,3200	30
3600,4000	

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Derating factor

Surrounding working environment temperature	+40 °C	+45 °C	+50 °C	+55 °C	+60 °C	
Continuous current carrying capacity	$I_{nm}=2500A$	1Inm	0.97Inm	0.91Inm	0.87Inm	0.82Inm
	$I_{nm}=4000A$	1Inm	0.96Inm	0.90Inm	0.86Inm	0.80Inm

If the altitude exceeds 2000m in the applicable working environment, the power frequency withstand voltage can be corrected according to the following table:

Altitude (m)	2000	3000	4000	5000
Power frequency withstand voltage (V)	3500	3150	2500	2000
Operating current correction factor	1	0.93	0.88	0.82
Correction coefficient for short-circuit breaking capacity	1	0.93	0.71	0.63

Tripping curve

