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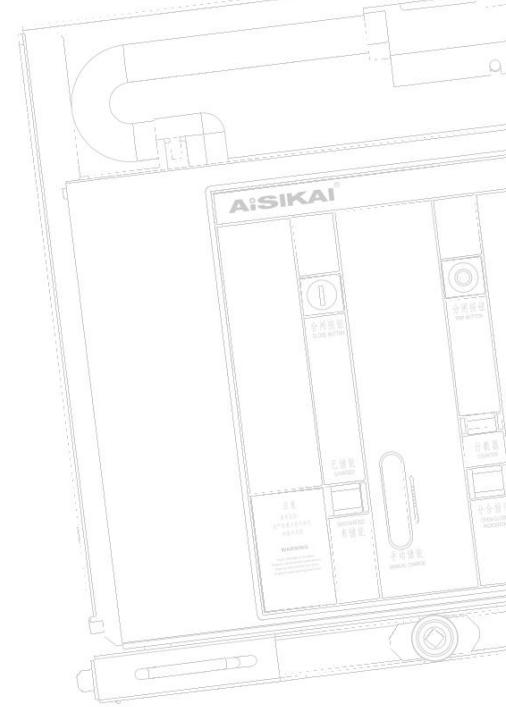


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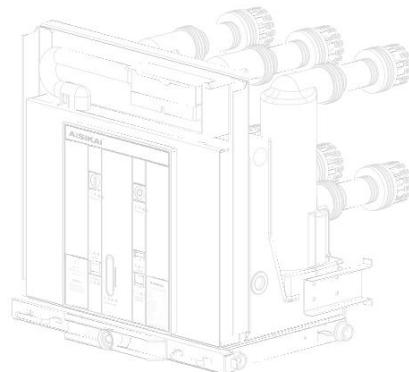


Contact

**AiSIKAI®**



## VACUUM CIRCUIT BREAKER SELECTION GUIDE



JIANGSU AISIKAI ELECTRIC CO.,LTD  
[wwwaisikai.cc](http://wwwaisikai.cc)

YANGZHOU AISIKAI AUTOMATION TECHNOLOGY CO.,LTD  
[wwwaisikai.org](http://wwwaisikai.org)

Tel: +86-514-83872777 83872888

Fax: +86-514-83872000

Free Service Telephone: 800-828-6568

E-mail: [aisikai@aisikai.cc](mailto:aisikai@aisikai.cc)

Factory Add: NO.5 Chuangye Road,Chenji Industrial Zone,  
Yizheng City,Jiangsu Province China

JIANGSU AISIKAI ELECTRIC CO.,LTD



HIGH VOLTAGE POWER DISTRIBUTION PRODUCTS



LOW VOLTAGE POWER DISTRIBUTION PRODUCTS



POWER QUALITY PRODUCTS



INDUSTRIAL CONTROL AND PROTECTION DEVICE



INTELLIGENT SYSTEM PRODUCTS



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# C OMPANY PROFILE

► Since established in 2007, AISIKAI has been committed to the manufacture, research, development and marketing of the high-quality high and low voltage electric switches. Our product lines cover level I, II, III power distribution fields. We are awarded as the National High Tech Enterprise, Double-Soft Certified Enterprise (i.e., software product certified and software enterprise certified), Little Giant Science and Technology Enterprise of Jiangsu Province, and Contract-keeping and Trustworthy Enterprise. We have invention patents, utility model patents and appearance patents. All of AISIKAI products have China Compulsory Certification (CCC) and China Quality Certification (CQC). From 2014, we have been recognized as Yangzhou City Engineering Technology Center and National Adopting International Standard Enterprise.

AISIKAI products have CE certification and IEC CB certification. We have passed the ISO9001 Quality Management System and ISO14001 Environment Management System, ISO45001 Occupational Health Management System, and SGS Global Qualified Supplier Authentication.

**QUALITY, SERVICE, REPUTATION, INNOVATION** is AISIKAI's unchanging company principle. We're always eager to make progress to offer reliable products and impeccable services. With your support and trust, AISIKAI will thrive and work towards a brighter future





## VACUUM CIRCUIT BREAKER



**VCB**  
INDOOR HIGH VOLTAGE VACUUM CIRCUIT BREAKER

## INDOOR HIGH VOLTAGE VACUUM CIRCUIT BREAKER

### OVERVIEW

ASKV5 series indoor high voltage vacuum circuit breaker (abbreviated as VCB) is the next generation vacuum circuit breaker independently developed and manufactured by our company which is competitive in the industry. VCB is used for AC 50Hz and rated voltage 12kV, 24kV, 40.5kV indoor device, suitable for a variety of different loads and frequent operation sites. VCB has an independently developed new type spring operating mechanism with simple mechanism and reliable operation.

Over the years, we have been specializing in the design, R&D and the professional manufacturing of the low voltage electric products. Oriented by the satisfaction and expectations of customers, we continuously improve product performance on the condition of safety and reliability. We use advanced automated assembly lines to ensure the timely delivery to customers. We observe strict quality standards to ensure that each product is qualified.



### OVERVIEW

Classified by the structure: Handcart type, Fixed type, side-mounted type, floor-standing type



Handcart type



Fixed type

### APPLICATIONS



### STANDARDS

GB1984-2003
JB3855-2004
GBT/T11022-1999
DL403
IEC62271-100
IEC56



### APPLICATION SCOPE

VCB are widely used in power plants, power grids, metallurgy, petrochemical, urban infrastructure such as airports, buildings, subway and other projects. In the power distribution system, VCB can be applied to control and protect cables, overhead lines, transformers, engines, generators and capacitor sets.

### STANDARDS

The technical parameters of VCB fully comply with GB1984, GB/T11022 and Chinese electric power industry standard DL403, and also meet the provisions of IEC62271-100, IEC56 standard specification and other major industrialized countries' relevant standards.

### OPERATION SAFETY

VCB have perfect mechanical and electrical interlocking devices. VCB have high operation reliability and long service life. When working with the matched cabinets, VCB can complete the safe power distribution function, ensuring the safety of operators and equipment.

### TESTS

VCB have passed the following tests to ensure their safe operation under normal operating conditions.

Type test: power frequency withstand voltage, lightning impulse withstand voltage, temperature rise, short-time and peak withstand current, short-circuit current breaking/closing capability and cable charging current breaking/closing test.

Factory routine test: mechanical characteristics test, main circuit power frequency withstand voltage test, auxiliary and control circuit insulation performance test, main circuit resistance test, interlocking operation test, mechanical and electrical operation test.



Side-mounted type



Floor-standing type

### ASKV5 SERIES INDOOR HIGH VOLTAGE VACUUM CIRCUIT BREAKER SELECTION TABLE

Product code	Function code	Rated voltage	Rated short-time withstand current		
Vacuum circuit breaker	G: Solid-sealed Polar Pole Type	12kV/24kV/40.5kV	20kA/25kA/31.5kA/40kA		
<b>ASK</b>	<b>V</b>	<b>5</b>	<b>G</b>	<b>12kV</b>	<b>1600A</b>
				/	/
				<b>31.5kA</b>	
Company name	Design code				
AISIKAI ELECTRIC					
Design marking	Model description 1:				
	ASKV5G - 12kV/1600A/20kA 1. Indoor high voltage vacuum circuit breaker 2. Fixed type 3. Rated voltage 12kV 4. Rated current 1600A 5. Rated short-time withstand current 20kA				

### QUALIFICATION DOCUMENTS



Test Report



Patent



Patent

### SLEEVE COUPLING TYPE INDOOR HIGH VOLTAGE VACUUM CIRCUIT BREAKER

#### SLEEVE COUPLING TYPE STRUCTURE OVERVIEW



#### APPLICATION SCOPE

The vacuum arc extinguish chamber of the ASKV5 series sleeve coupling type indoor high voltage AC vacuum circuit breaker's main circuit is positioned in the enclosed insulating cylinder. The insulating cylinder is made of epoxy resin with reliable mechanical and electrical performance. The cylinder is moulded adopting the advanced automatic pressure gelation (APG) process. The cylinder functions not only a support, and also as insulation between phase and phase, between phase and ground.

The design of the insulating cylinder fully takes into account the requirements of the national standard and the harsh working conditions. It can not only prevent the vacuum arc extinguish chamber from being affected by the external environment, but also prevent dust and foreign matter from entering the main circuit. It also ensures that even in humid, hot and heavily polluted environments, it presents a high resistance state to the voltage effect.

► VCB are widely used in power plants, power grids, metallurgy, petrochemical, urban infrastructure such as airports, buildings, subway and other projects. In the power distribution system, VCB can be applied to control and protect cables, overhead lines, transformers, engines, generators and capacitor sets.

#### TESTS

VCB have passed the following tests to ensure their safe operation under normal operating conditions.

- Type test: power frequency withstand voltage, lightning impulse withstand voltage, temperature rise, short-time and peak withstand current, short-circuit current breaking/closing capability and cable charging current breaking/closing test.
- Factory routine test: mechanical characteristics test, main circuit power frequency withstand voltage test, auxiliary and control circuit insulation performance test, main circuit resistance test, interlocking operation test, mechanical and electrical operation test.

#### OPERATION SAFETY

#### STANDARDS

- VCB have perfect mechanical and electrical interlocking devices. VCB have high operation reliability and long service life. When working with the matched cabinets, VCB can complete the safe power distribution function, ensuring the safety of operators and equipment.

- The technical parameters of VCB fully comply with GB1984, GB/T11022 and Chinese electric power industry standard DL403, and also meet the provisions of IEC62271-100, IEC56 standard specification and other major industrialized countries' relevant standards.

## OPERATION MECHANISM INTRODUCTION



1.Circuit board



Modular secondary control circuit board, with self-fastening plug-in fittings makes it convenient to replace and electrical connections reliable.

2.Closing electromagnet



Fully enclosed structural design to protect coil from dampness and reduce the tripping work needed for opening.

3.Surface treatment



80% of the machine parts are plated with Ni-P alloy, which greatly improves the parts' anti-corrosion ability and ensures the consistent and stable quality of the machine.

4.Closing unit



The switching unit is simple in structure and reliable in operation. It not only fundamentally prevents the faults such as failure to maintain and refuse to open after close, but also reduce the tripping work needed for opening.

5.Opening buffer



High-performance buffer can reduce the amplitude of over-swing or rebound of contacts when the circuit breaker is opening, reduce the probability of arc re-burning when the circuit breaker is opening, and ensure the mechanical service life of vacuum arc extinguish chamber.

6.Overall advantages



The operation mechanism is simple in structure and reliable in action. The parts of different specifications are versatile. Since this mechanism is completely developed by our company, we can customize special products according to users' requirements.

## MAIN TECHNICAL PARAMETERS

Item	Unit	Technical parameters														
		12		24		42		65								
Rated voltage	kV															
Rated insulation level	Rated short-time power frequency withstand voltage(1min) Rated lightning impulse withstand voltage (peak)	kV														
Rated frequency	Hz															
		630	630	1250	1250											
		1250	1250	1600	1600											
				2000	2000											
				2500	2500	3150										
				3150	3150	4000										
				4000	4000	5000										
Rated current	A															
		630	630	1250	1250											
		1250	1250	1600	1600											
				2000	2000											
				2500	2500											
				3150	3150											
				4000	4000											
Rated short-circuit breaking current	kA	20	25	31.5	40	50	20	25	31.5							
Rated short-time withstand current	kA	20	25	31.5	40	50	20	25	31.5							
Rated peak withstand current	kA	50	63	80	100	125	50	63	80							
Rated short-circuit closing current (peak)	kA	50	63	80	100	125	50	63	80							
4s thermal stable current	kA	20	25	31.5	40	50	20	25	31.5							
Rated dynamic stable current	kA	50	63	80	100	125	50	63	80							
Rated capacitor set closing surge current	kA	12.5 (frequency not higher than 1000Hz)														
Rated single/back-to-back capacitor set breaking current	A	630 / 400														
Rated short-circuit duration	S	4														
Secondary circuit power frequency withstand voltage	V	2000														
Closing coil	V	AC 110 / 220 DC 110 / 220														
Rated operational voltage	V	AC 110 / 220 DC 110 / 220														
Opening coil	V	AC 110 / 220 DC 110 / 220														
Energy storage motor	V	AC 110 / 220 DC 110 / 220														
Opening time (rated voltage)	ms	20~50														
Closing time (rated voltage)	ms	30~70														
The allowable wear cumulative thickness of moving and fixed contacts	mm	3														
Energy storage Time	s	≤15														
Contact opening distance	mm	9±1(630A~1250A)	11±1(1250A~4000A)													
Overtravel	mm	3~4														
Contact closing bounce Time	ms	≤2														
Three phase opening/closing non-synchronous characteristic	ms	≤2														
Average opening speed	m/s	0.9~1.3														
Average closing speed	m/s	0.4~0.8	0.5~0.9 (side-mounted)													
Contact opening rebound amplitude	mm	≤2	≤3(side-mounted)													
Main conductive circuit resistance	μΩ	≤55 (630A)	≤45 (630A side)	≤40 (1250A side)	630~1250A	≤60	≤50									
		≤45 (1250A)	≤35 (1600A~2000A)	≤25 (2500A above)	1600~2000A	≤35	≤30									
					(2500A above)	≤25	≤20									

Contact closing contact pressure	N	2000±200(20KA) 2400±200(25KA) 3100±200(31.5KA) 4750±200(40KA)
Rated operation sequence		O-0.3s-CO-180s-CO
Mechanical life	times	30000 (31.5kA and below ) 20000 (40kA and above )

1.The average opening speed refers to the average speed of the breaker contact just after opening 6mm.

2.(1)v12kV circuit breaker: the average closing speed refers to the average speed of the breaker contact before closing 8mm

(2)24kV circuit breaker : the average closing speed refers to the average speed of the circuit breaker contacts full opening distance.

3.When the rated short-circuit breaking current < 40kA, θ = 0.3s, When the rated short-circuit breaking current is ≥40kA, θ = 180s.

#### Energy Storage Motor Technical Parameters(Sleeve Coupling Type)

Model	Rated voltage	Rated input power(W)		Normal operation voltage range	Energy storage time at rated voltage(S)
		12kV	24kV		
ZYJ55-1	DC110V	75,100	70,100	85%~110%rated voltage	≤15
	DC220V				

#### Energy Storage Motor Technical Parameters(Solid-sealed Type)

Model	Rated voltage	Rated input power(W)		Normal operation voltage range	Energy storage time at rated voltage(S)
		12kV	24kV		
ZYJ55-1	DC110V	70,100		85%~110%rated voltage	≤15
	DC220V				

#### Technical Parameters of Closing and Opening Electromagnets and Related Electrical Components

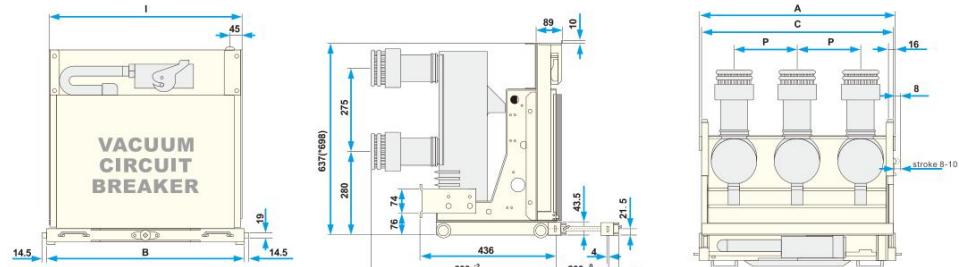
Item	category	Closing electromagnet	Opening electromagnet	Locking electromagnet	Anti-tripping relay	
Rated operational voltage(V)	DC220	DC110	DC220	DC110	DC220	DC110
Rated operational current(A)	1.1	2.2	1.1	2.2	25mA	9.1mA
Rated power(W)	242	242	242	242	2.7	1.0
Normal operational voltage range	85%~110% rated voltage	65%~120% rated voltage; If at voltage lower than 30% of rated voltage, the switch cannot open.			—	—

#### Secondary Control Circuit Solution Portfolio

Control voltage	Locking solution	Anti-tripping solution	Under-voltage tripping solution	Over-current tripping solution		
AC220V	With electrical locking	With anti-tripping relay	With under-voltage tripper	With over-current tripper	Number of over-current trippers	Action current value
DC220V				With over-current tripper	2 units/3 units	3.5/5
AC110V	Without electrical locking	without anti-tripping relay	Without under-voltage tripper	Without over-current tripper		
DC110V						

#### SLEEVE COUPLING TYPE VACUUM CIRCUIT BREAKER OUTLINE AND INSTALLATION DIMENSIONS

12kV Low Current Handcart Vacuum Circuit Breaker Outline Dimensions(630A~1600A)



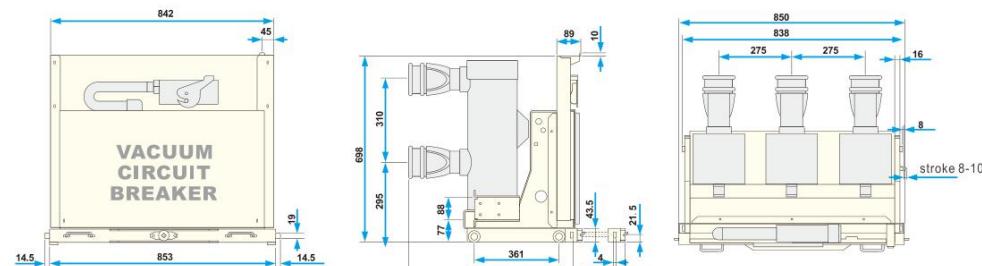
Rated current(A)	Rated short-circuit breaking current(KA)	P(mm)	A(mm)	B(mm)	C(mm)	I(mm)	Supporting cabinet width (mm)
630-1250	20~40	150	502	503	492	492	650
		210	650	653	640	638	800

Moving and static contact fit size	Rated current(A)	Star shaped contact	Static contact size(mm)
630	CT-24	Ø35	
1250	CT-30	Ø49	
1600	CT-36	Ø55	

1.Main circuit adopts sleeve coupling type

2.In the diagram (\*698) is an optional solution for the height of the sealing plates with phase spacing 275

12kV High Current Handcart Vacuum Circuit Breaker Outline Dimensions(1600A~5000A)

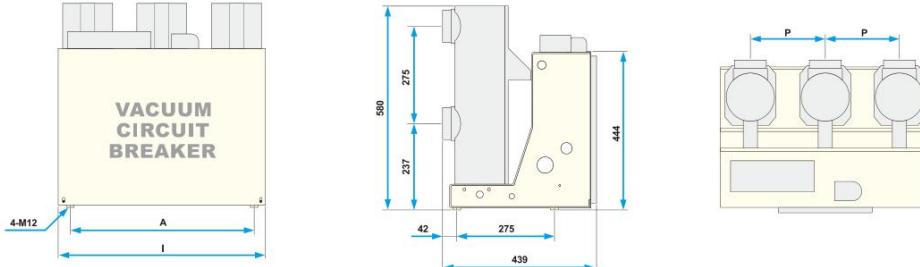


Rated current(A)	Rated short-circuit breaking current(KA)	Supporting cabinet width (mm)
1600~4000	25~40	1000

Moving and static contact fit size	Rated current(A)	Star shaped contact	Static contact size(mm)
1600~2000	CT-48	Ø79	
2500~3150	CT-64		
4000	CT-82	Ø109	
5000	CT-96		

Main circuit adopts sleeve type;

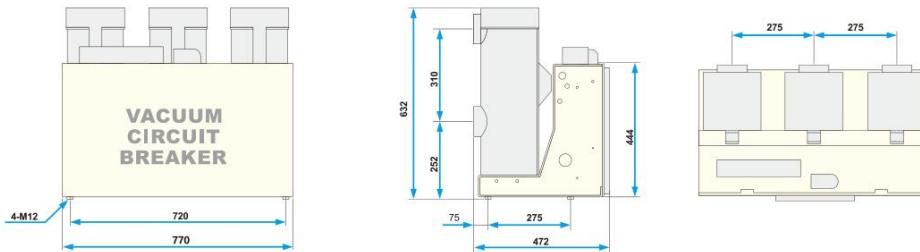
12kV Low Current Fixed Vacuum Circuit Breaker Outline Dimensions(630A~1600A)



Rated current(A)	Rated short-circuit breaking current(kA)	P(mm)	I(mm)	A(mm)	Supporting cabinet width(mm)
630~1600	20~40	210	588	520	800
		275	770	720	1000

Main circuit adopts sleeve type.

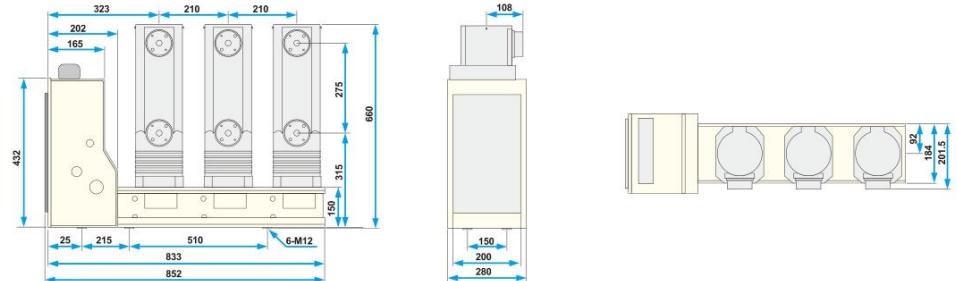
12kV high current handcart vacuum circuit breaker dimensions(1600A~4000A)



Rated current(A)	Rated short-circuit breaking current(kA)
1600~5000	25~40

Main circuit adopts sleeve type

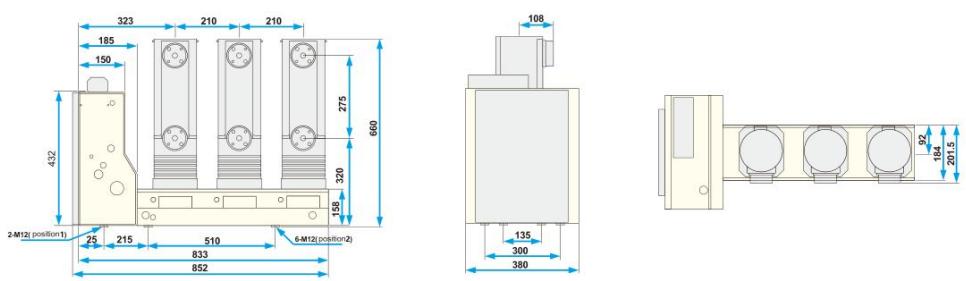
12kV (A) side mounted vacuum circuit breaker (fixed type) dimensions(630A~1600A)



Rated current(A)	Rated short-circuit breaking current(kA)	Supporting cabinet width/mm
630~1600	20~40	280

Main circuit adopts sleeve type

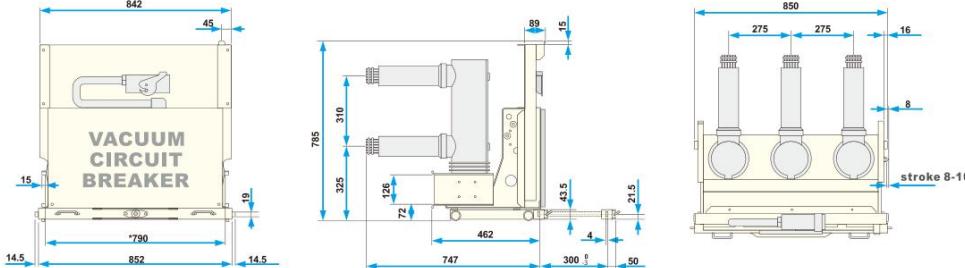
12kV (B) side mounted vacuum circuit breaker (fixed type) dimensions(630A~1250A)



Rated current(A)	Rated short-circuit breaking current(kA)	Supporting cabinet width/mm
630~1250	20~40	380

Main circuit adopts sleeve type

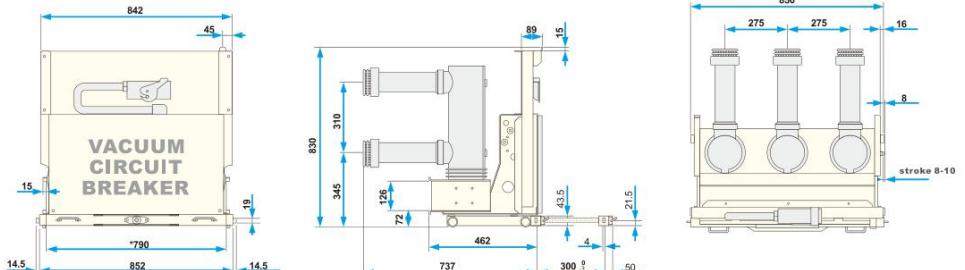
24kV Handcart Vacuum Circuit Breaker Outline Dimensions(630A~1600A)



Rated current(A)	Rated short-circuit breaking current(KA)	Supporting cabinet width(mm)
630		
1250	40 and below	1000
1600		

Main circuit adopts sleeve type

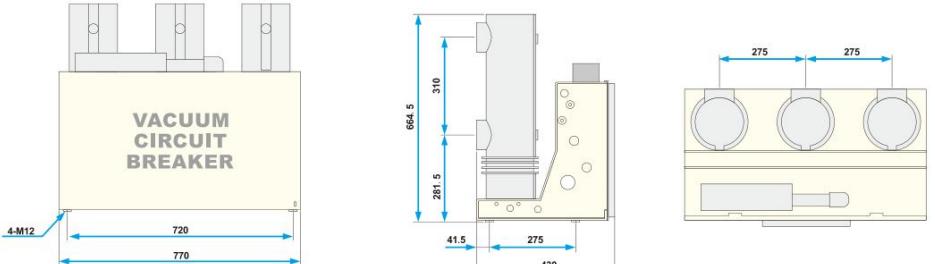
24kV Handcart Vacuum Circuit Breaker Outline Dimensions(1600A~3150A)



Rated current(A)	Rated short-circuit breaking current(KA)	Supporting cabinet width(mm)
2000/2500	40	1000
2500/3150		

Main circuit adopts sleeve type

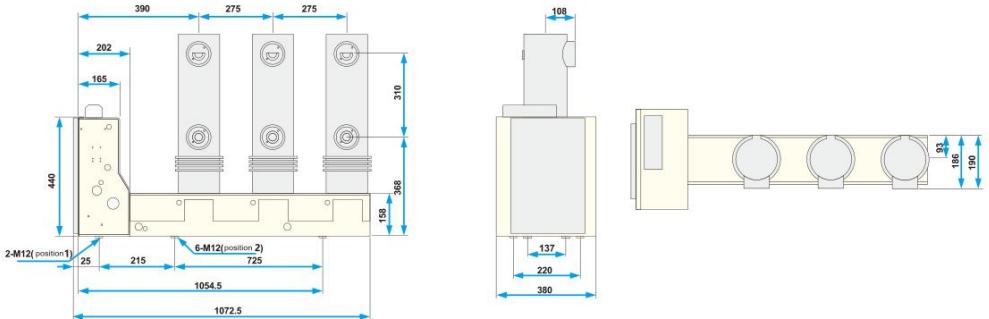
24kV Fixed Vacuum Circuit Breaker Outline Dimensions(630A~1600A)



Rated current(A)	Rated short-circuit breaking current(KA)	Supporting cabinet width(mm)
630~1250/1600	40 and below	1000

Main circuit adopts sleeve type

24kV Side-mounted Vacuum Circuit Breaker(Sleeve Coupling) Dimensions(630A~1250A)



Rated current(A)	Rated short-circuit breaking current(KA)	Supporting cabinet width(mm)
630~1250	20~40	380

Main circuit adopts sleeve type

## SOLID-SEALED POLAR POLE TYPE INDOOR HIGH VOLTAGE VACUUM CIRCUIT BREAKER OVERVIEW

### Solid-sealed Type Structure Overview



The main electrical circuit is in the form of solid-sealed polar poles using solid insulation method. This is a special embedding technology to achieve solid insulation of the main electrical circuit by casting the vacuum arc extinguisher and conductive parts with ultra-low resistance value in epoxy resin. The operating mechanism is a new type of spring operating mechanism.

Solid-sealed structure: the primary main circuit of circuit breaker uses solid-sealed polar poles with solid insulation technology. The solid-sealed polar poles. The vacuum arc extinguisher and other parts of the primary conductive circuit are sealed directly in a special epoxy resin material using advanced automatic pressure gelation (APG) process to form a main electrical circuit module. Double skirt design is used at the mounting end of the solid-sealed polar pole. The polar pole has the characteristics of large creepage ratio distance, high mechanical strength, high precision of parts, small number of parts, without secondary adjustment and small lap surface. The electric field distribution of the poles is uniform, avoiding the damage to the organic insulation caused by the local electric field concentration. What's more, this structure design can simplify the assembly process of primary main circuit, completely avoid the problem of loosening the primary main circuit connection bolts due to vibration in operation, ensure the high reliability of the primary main circuit connection, and make it possible to realize the maintenance-free primary main circuit of the circuit breaker.

### Structure introduction

### Tests

VCB have passed the following tests to ensure their safe operation under normal operating conditions.

Type test: power frequency withstand voltage, lightning impulse withstand voltage, temperature rise, short-time and peak withstand current, short-circuit current breaking/closing capability and cable charging current breaking/closing test.

Factory routine test: mechanical characteristics test, main circuit power frequency withstand voltage test, auxiliary and control circuit insulation performance test, main circuit resistance test, interlocking operation test, mechanical and electrical operation test.

### Applied standard

GB1984-2003  
JB3855-2004  
GB/T11022-1999  
DL403  
IEC62271-100  
IEC56

## OPERATION MECHANISM INTRODUCTION



1.Circuit board



Modular secondary control circuit board, with self-fastening plug-in fittings makes it convenient to replace and electrical connections reliable.

2.Closing electromagnet



Fully enclosed structural design to protect coil from dampness and reduce the tripping work needed for opening.

3.Surface treatment



80% of the machine parts are plated with Ni-P alloy, which greatly improves the parts' anti-corrosion ability and ensures the consistent and stable quality of the machine.

4.Closing unit



The switching unit is simple in structure and reliable in operation. It not only fundamentally prevents the faults such as failure to maintain and refuse to open after close, but also reduce the tripping work needed for opening.

5.Opening buffer



High-performance buffer can reduce the amplitude of over-swing or rebound of contacts when the circuit breaker is opening, reduce the probability of arc re-burning when the circuit breaker is opening, and ensure the mechanical service life of vacuum arc extinguisher chamber.

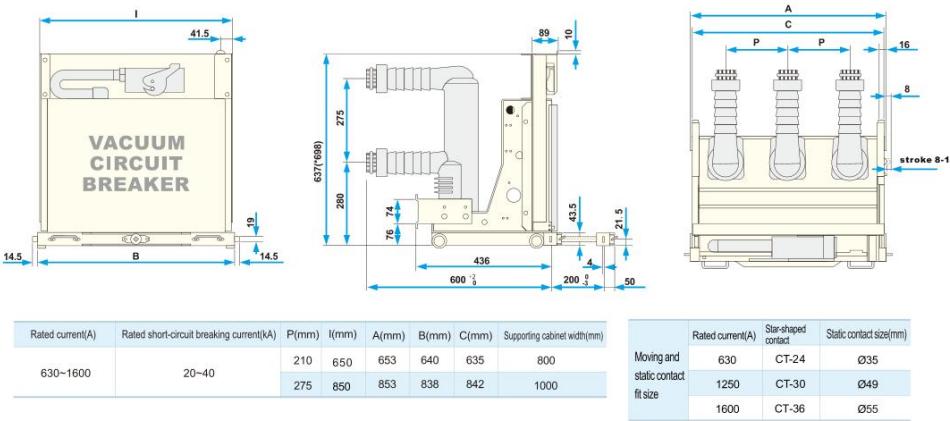
6.Overall advantages



The operation mechanism is simple in structure and reliable in action. The parts of different specifications are versatile. Since this mechanism is completely developed by our company, we can customize special products according to users' requirements.

SOLID-SEALED POLAR POLE TYPE INDOOR HIGH VOLTAGE VACUUM CIRCUIT BREAKER OUTLINE AND INSTALLATION DIMENSIONS

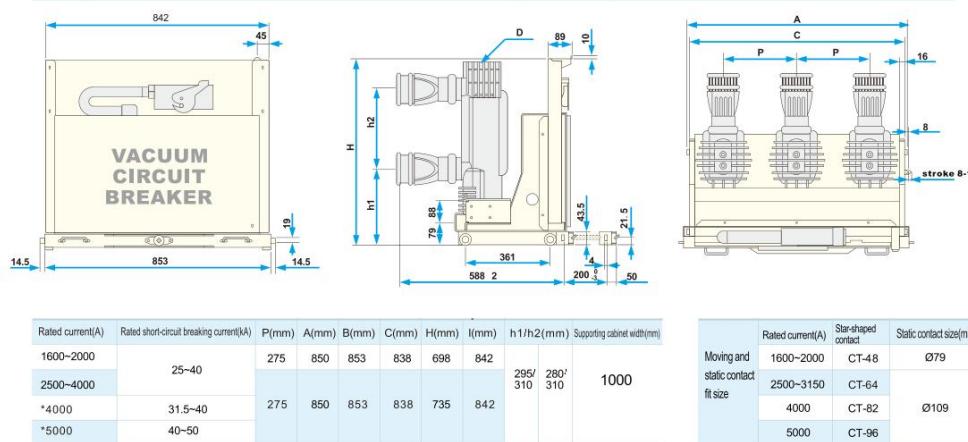
12kV Low Current Handcart Vacuum Circuit Breaker Outline Dimensions(630A~1600A)



1.Main circuit with solid-sealed pole;

2.In the diagram (\*698) is an optional scheme for the height of the sealing plates with phase spacing 275.

12kV High Current Handcart Vacuum Circuit Breaker Outline Dimensions(1600A~4000A)



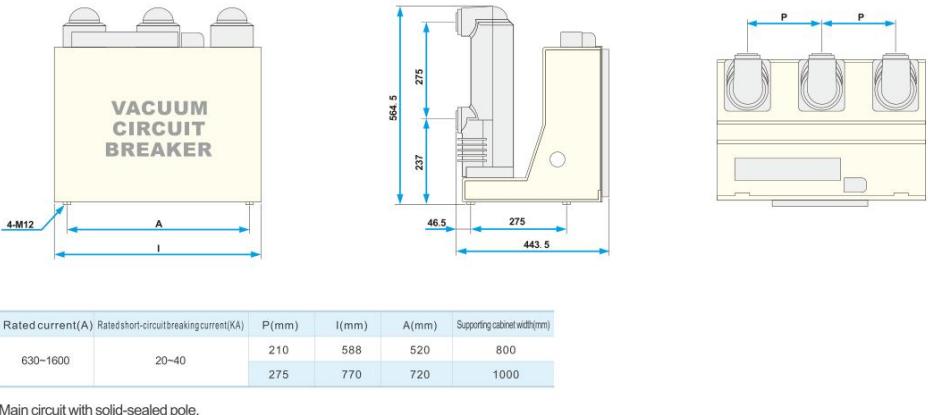
1.Main circuit with solid-sealed pole;

2.When the rated current is 2500A and above, the circuit breaker must have a cooling cover D;

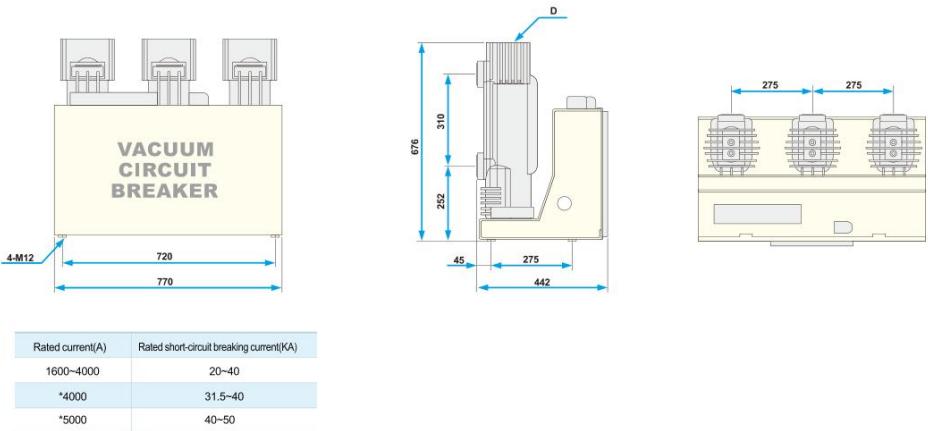
3.Rated current up to 4000A when use forced cold air;

4.\* This specification is a special type. Please contact our technician before ordering..

12kV Low Current Fixed Vacuum Circuit Breaker Outline Dimensions(630A~1600A)



12kV High Current Fixed Vacuum Circuit Breaker Outline Dimensions(1600A~4000A)



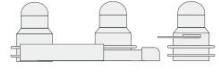
1.Main circuit with solid-sealed pole;

2.When the rated current is 2500A and above, the circuit breaker must have a cooling cover D;

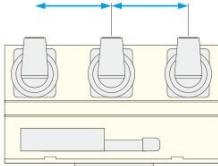
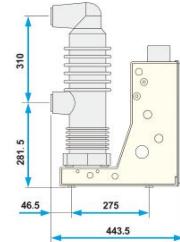
3.Rated current up to 4000A when use forced cold air;

4.\* this specification is a special type. Please contact our technician before ordering..

24kV Fixed Vacuum Circuit Breaker Outline Dimensions(630A~1250A)



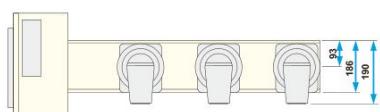
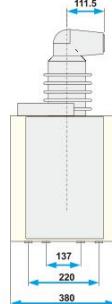
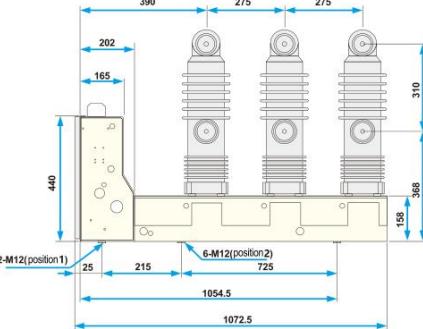
VACUUM CIRCUIT BREAKER



Rated current(A)	Rated short-circuit breaking current(kA)	Supporting cabinet width(mm)
630~1250	31.5 and below	1000

Main circuit with solid-sealed pole.

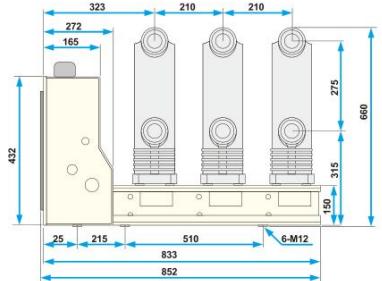
24kV Side-mounted Vacuum Circuit Breaker(Solid-sealed) Outline Dimensions(630A~1250A)



Rated current(A)	Rated short-circuit breaking current(kA)	Supporting cabinet width(mm)
630~1250	20~31.5	380

Main circuit with solid-sealed pole.

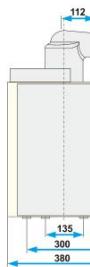
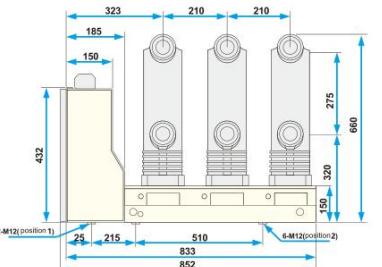
12kV Side-mounted Vacuum Circuit Breaker(Fixed) Outline Dimensions(Type C)(630A~1600A)



Rated current(A)	Rated short-circuit breaking current(kA)	Supporting cabinet width(mm)
630~1600	20~40	280

Main circuit with solid-sealed pole.

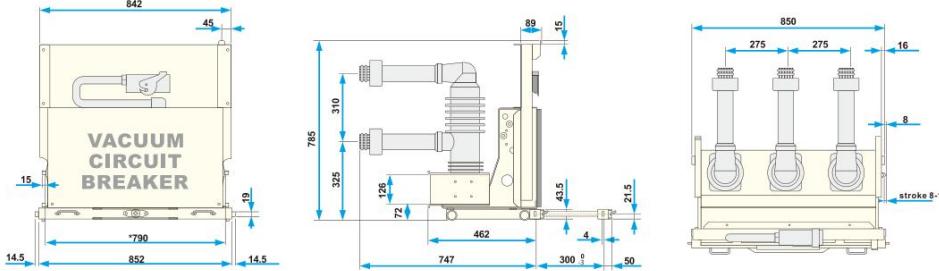
12kV Side-mounted Vacuum Circuit Breaker(Fixed) Outline Dimensions(Type D)(630A~1600A)



Rated current(A)	Rated short-circuit breaking current(kA)	Supporting cabinet width(mm)
630~1600	20~40	380

Main circuit with solid-sealed pole.

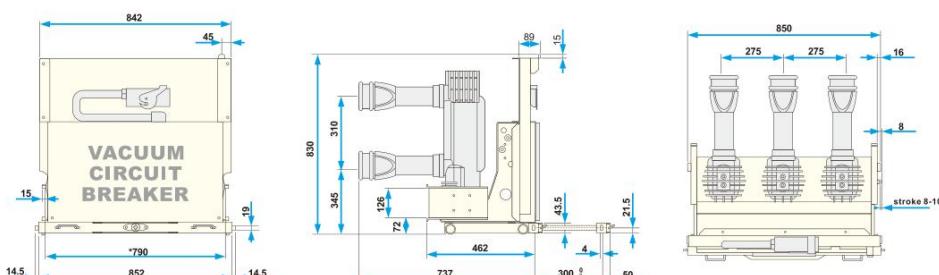
24kV Handcart Vacuum Circuit Breaker Outline Dimensions(630A-1250A)



Rated current(A)	Rated short-circuit breaking current(kA)	Supporting cabinet width(mm)	Moving and static contact fit size	Star-shaped contact	Static contact size(mm)
630	31.5 and below	1000	CT-24	Ø35	
1250			CT-30	Ø49	

Main circuit with solid-sealed pole.

24kV Handcart Vacuum Circuit Breaker Outline Dimensions(1600A-3150A)



Rated current(A)	Rated short-circuit breaking current(kA)	Supporting cabinet width(mm)	Moving and static contact fit size	Star-shaped contact	Static contact size(mm)
1600		1000	CT-36	Ø55	
1600/2000/2500min	31.5 and below		CT-48	Ø79	
2500max/3150			CT-64	Ø109	

1.Main circuit with solid-sealed pole;

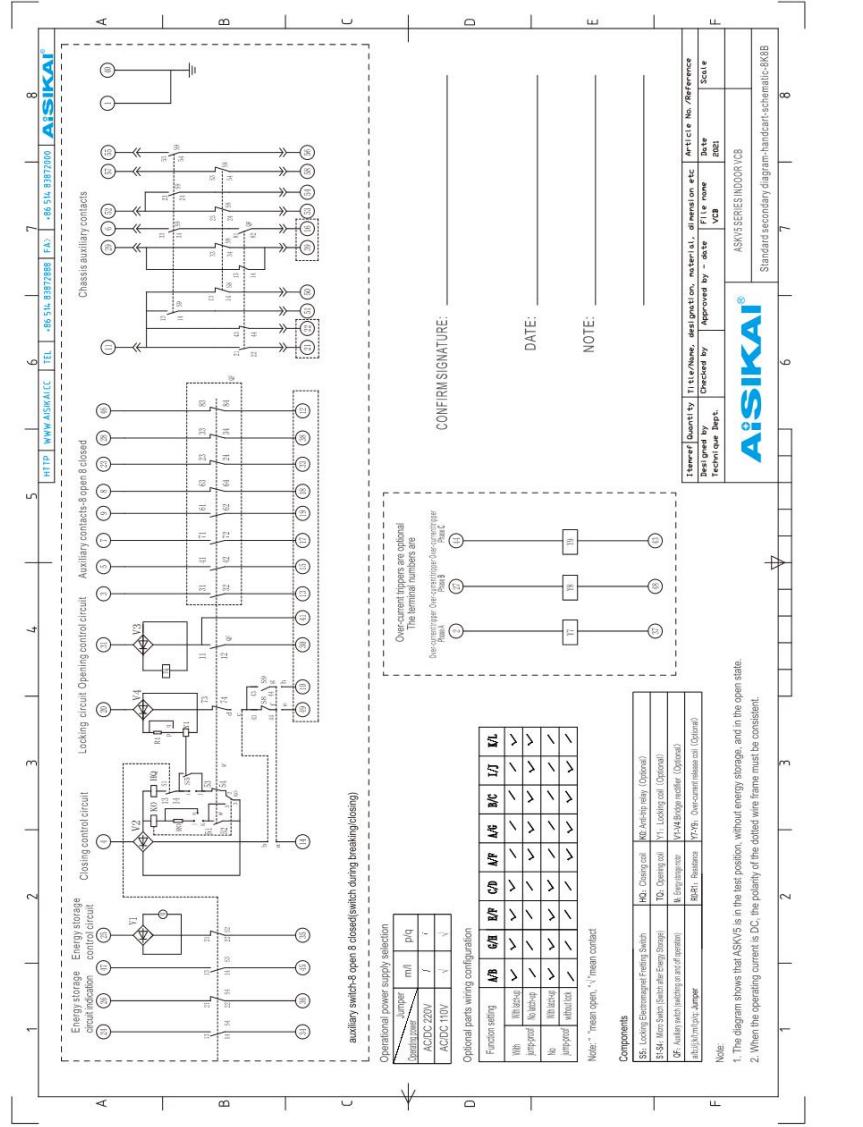
2.\*min/max:Representative pole size specification.

### ORDERING TECHNICAL SPECIFICATIONS

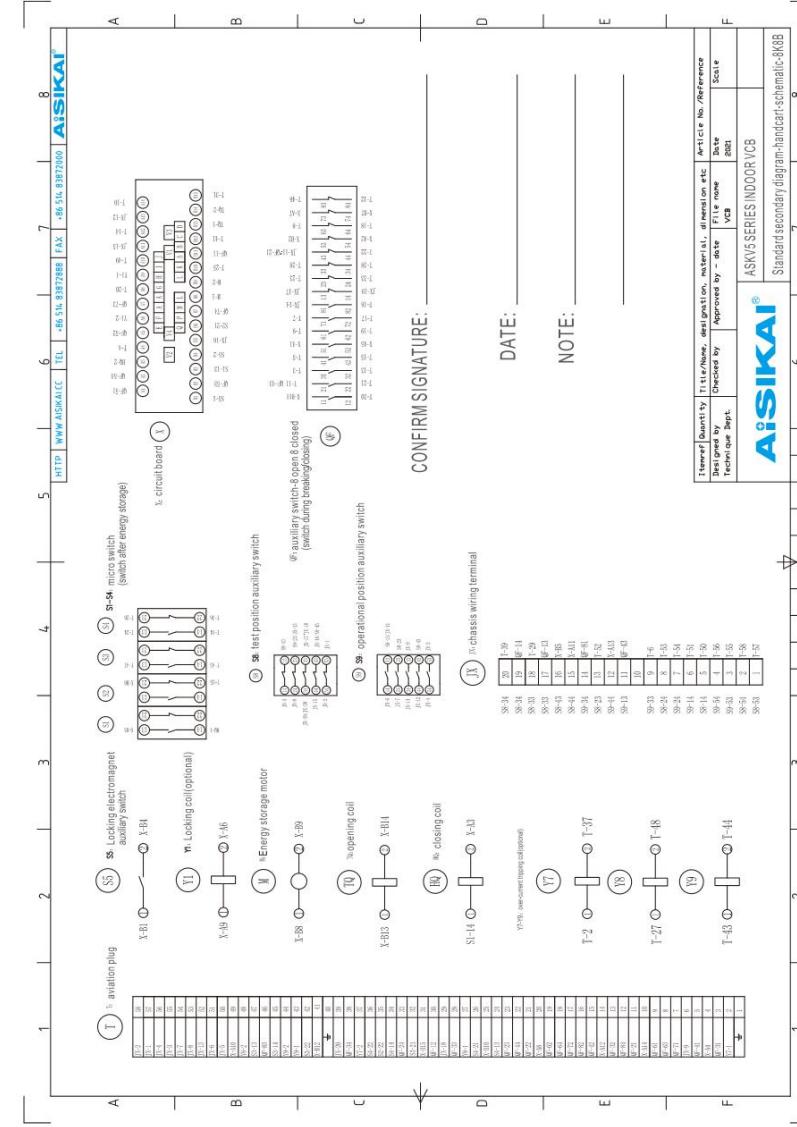
Customer name			Project name	
Date	Quantity		Delivery date	
Mechanical structure	VS1 (default) <input type="checkbox"/> Special requirement <input type="checkbox"/>		Rated voltage	12KV <input type="checkbox"/> 24KV <input type="checkbox"/>
Rated current	630A <input type="checkbox"/> 1250A <input type="checkbox"/> 1600A <input type="checkbox"/> 2000A <input type="checkbox"/> 2500A <input type="checkbox"/> 3150A <input type="checkbox"/> 4000A <input type="checkbox"/>			
Breaking current	20KA <input type="checkbox"/> 25KA <input type="checkbox"/> 31.5KA <input type="checkbox"/> 40KA <input type="checkbox"/>			
Installation method	Handcart <input type="checkbox"/> Fixed <input type="checkbox"/> Side-mounted (left outlet line) <input type="checkbox"/> Side-mounted (right outlet line) <input type="checkbox"/>			
Vacuum arc extinguishing chamber	Normal insulating cylinder <input type="checkbox"/> Solid-sealed polar pole <input type="checkbox"/> Factory requirement <input type="checkbox"/>			
Cabinet type	650(distance 150mm) <input type="checkbox"/> 800(distance 210mm) <input type="checkbox"/> 1000(distance 275mm) <input type="checkbox"/>			
Installation dimensions diagram	AISIKAI standard <input type="checkbox"/> provided by customer <input type="checkbox"/>			
Electrical schematic diagram	AISIKAI standard <input type="checkbox"/> provided by customer <input type="checkbox"/>			
Operational voltage	AC220V <input type="checkbox"/> AC110V <input type="checkbox"/> DC220V <input type="checkbox"/> DC110V <input type="checkbox"/> Non-standard voltage( ) V <input type="checkbox"/>			
Auxiliary contacts	8 open 8 closed is default <input type="checkbox"/> Optional: 10 open 10 closed <input type="checkbox"/> Special customized <input type="checkbox"/>			
Closing anti-tripping/locking	Without closing anti-tripping, without closing locking(default) <input type="checkbox"/> Optional:closing anti-tripping <input type="checkbox"/> closing locking <input type="checkbox"/>			
Over-current tripping device	Without over-current tripper(default) <input type="checkbox"/> Optional: Y7 Y8 <input type="checkbox"/> Tripping current <input type="checkbox"/>			
Under-voltage tripping device	Without under-voltage tripper(default) <input type="checkbox"/> Optional: DC220V <input type="checkbox"/> DC110V <input type="checkbox"/>			
Handcart grounding method	Bottom friction grounding (standard) <input type="checkbox"/> Grounding on both sides of the rail <input type="checkbox"/>			
Program lock: (optional for handcart type)	Two locks and one key <input type="checkbox"/> Three locks two keys <input type="checkbox"/> Four locks two keys <input type="checkbox"/> Special program lock <input type="checkbox"/>			
Mounting position: chassis <input type="checkbox"/> Switch left side sealing plate <input type="checkbox"/>				
Chassis locking: (optional for handcart type)	Optional: DC220V <input type="checkbox"/> DC110V <input type="checkbox"/>			
Emergency interlocking device: (optional for fixed type)	Emergency breaking interlock <input type="checkbox"/> Emergency breaking and closing interlock <input type="checkbox"/> Extension length: standard is 45mm <input type="checkbox"/> Special length: Middle <input type="checkbox"/> Left extension <input type="checkbox"/> Right extension <input type="checkbox"/> Note: The left and right is judged from the front of the circuit breaker (face to panel) <input type="checkbox"/>			
Spindle interlocking device (optional for fixed type)	Left extension <input type="checkbox"/> Right extension <input type="checkbox"/> Spindle extension length: standard is 45mm <input type="checkbox"/> Special length: <input type="checkbox"/> Note: The left and right is judged from the front of the circuit breaker (face to panel) <input type="checkbox"/>			
Use environment	Altitude: ≤1000m <input type="checkbox"/> Temperature -25 °C ~+40 °C <input type="checkbox"/> Special requirement: <input type="checkbox"/>			
Packaging and transportation requirements:				
Other technical requirements:				
Note:The price of the circuit breaker already includes standard configuration (details in the above table). Other optional parts are charged additionally.				
User confirmation signature			Contact telephone number	

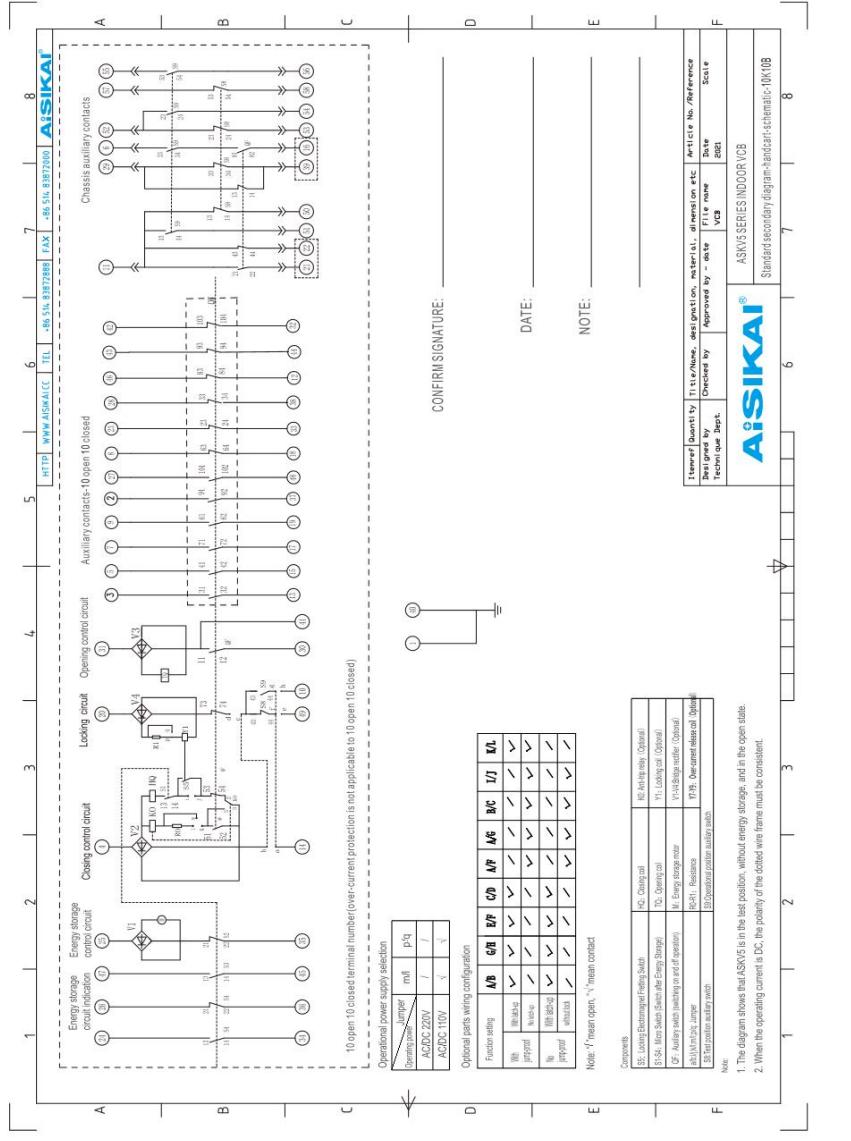
## ELECTRICAL SCHEMATIC DIAGRAM

Handcart vacuum circuit breaker electrical schematic diagram- 8 open 8 closed

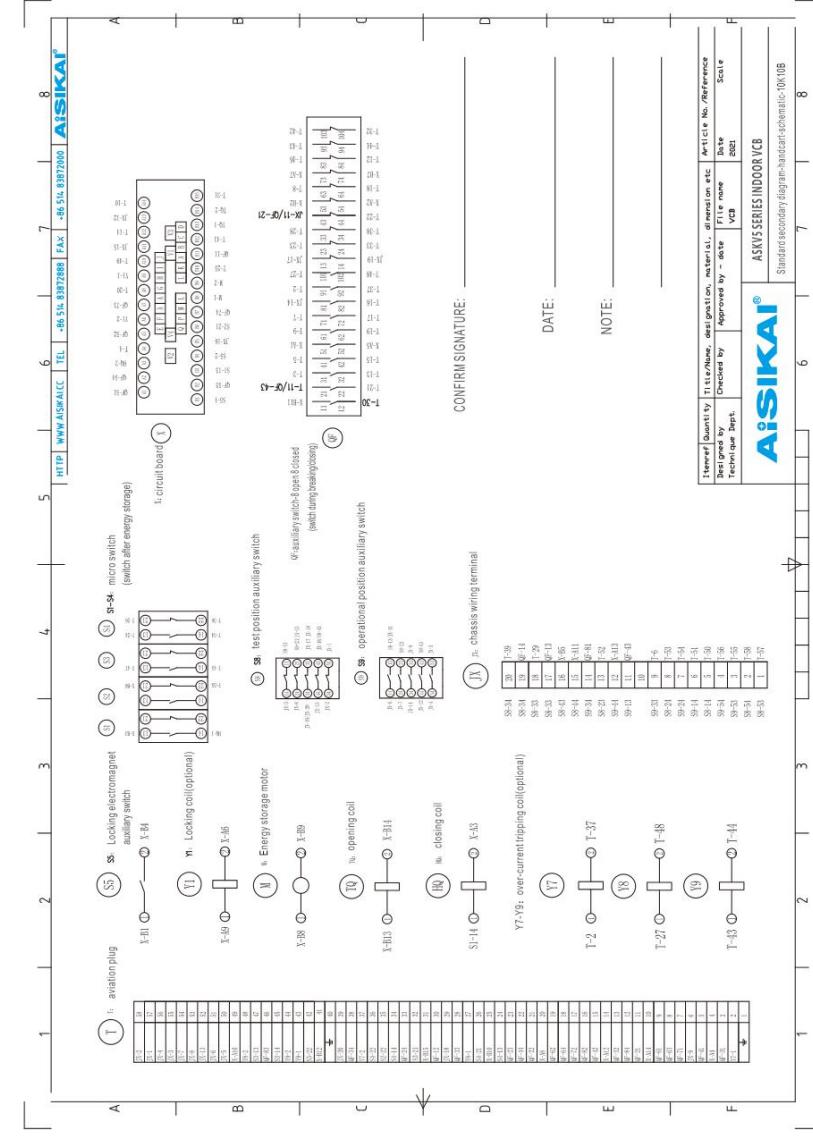


Handcart vacuum circuit breaker secondary wiring diagram- 8 open 8 closed



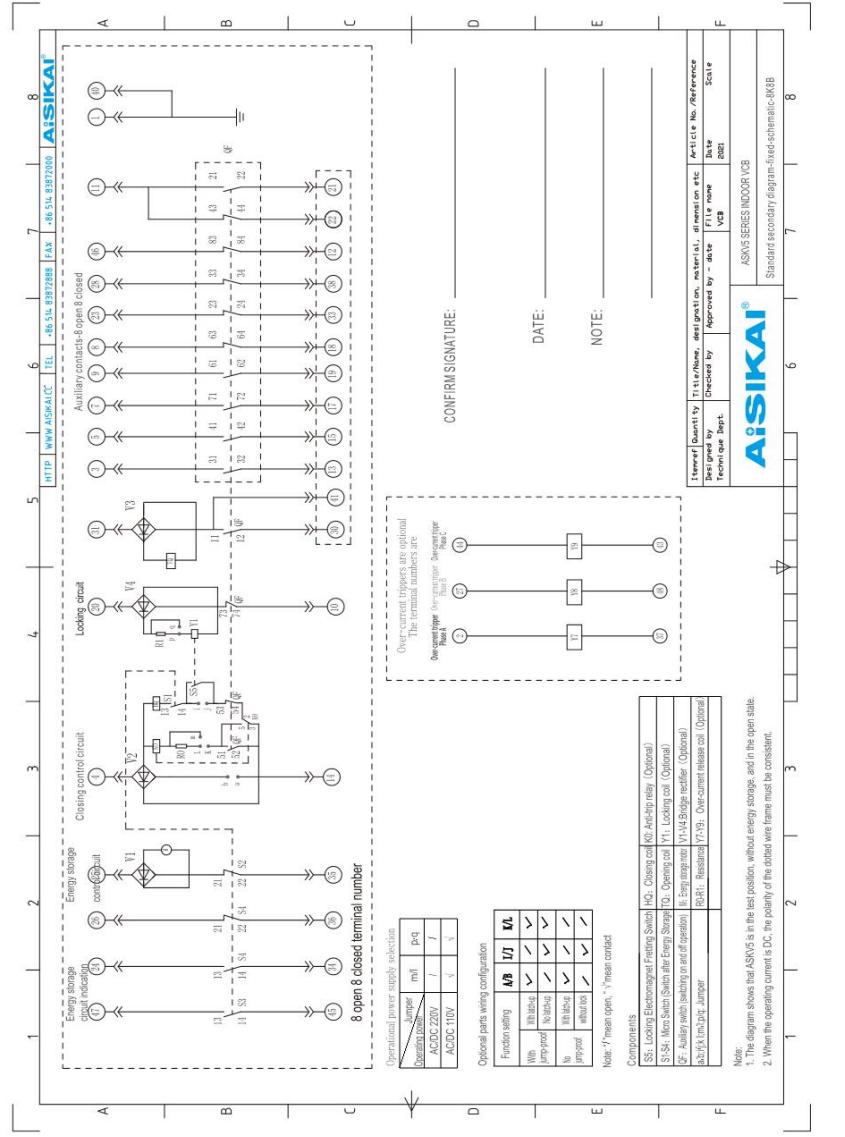


Handcart vacuum circuit breaker secondary wiring diagram- 10 open 10 closed

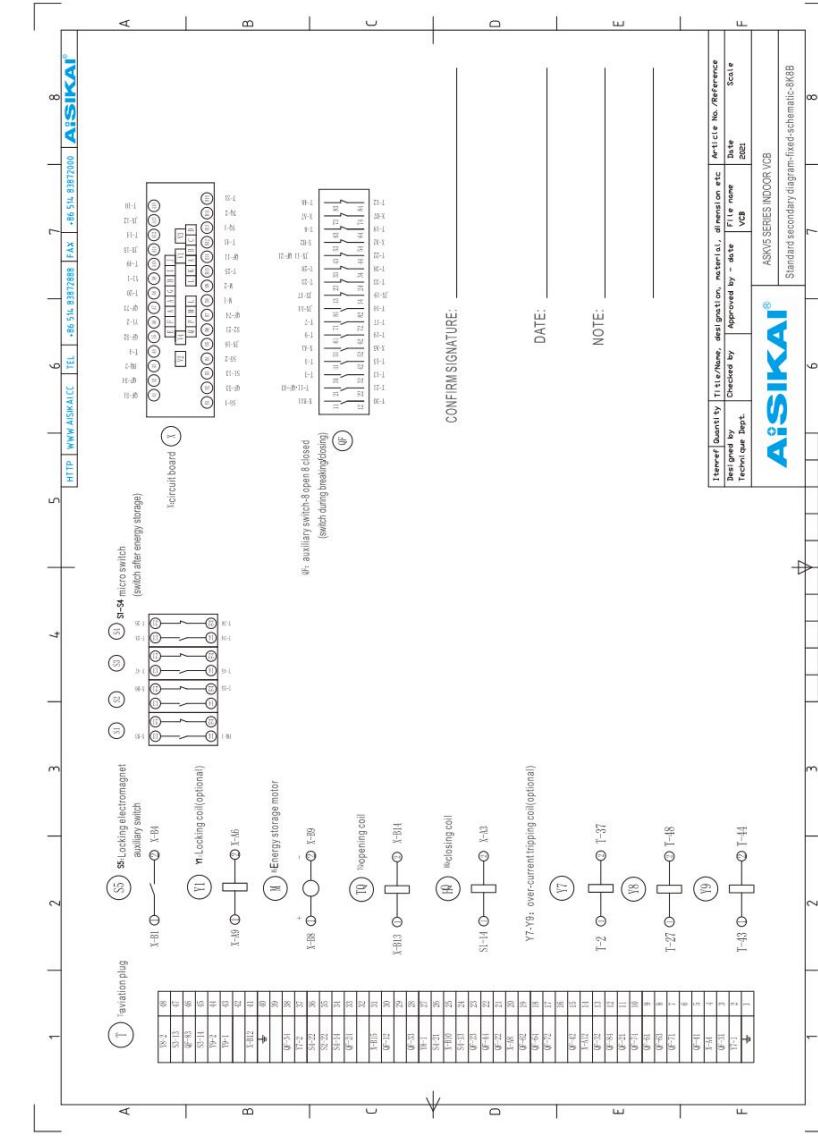


### ELECTRICAL SCHEMATIC DIAGRAM

Fixed vacuum circuit breaker electrical schematic diagram- 8 open 8 closed

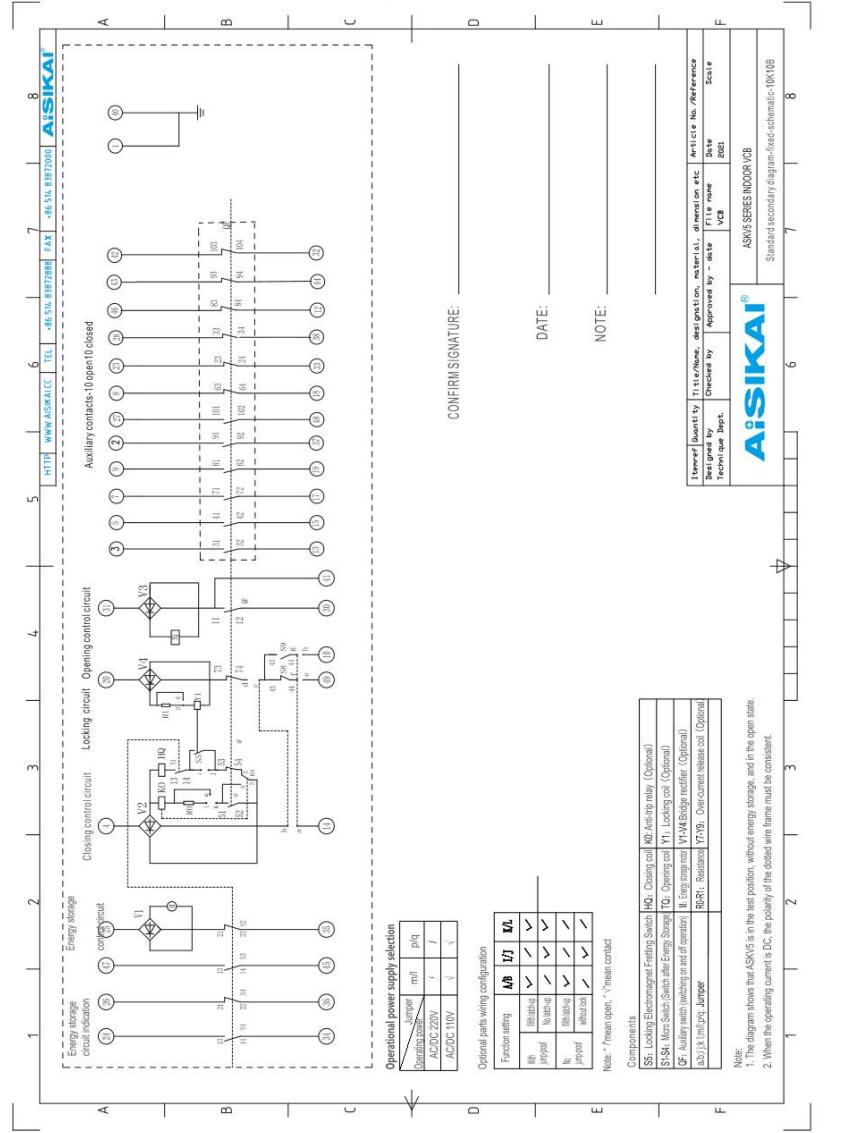


Fixed vacuum circuit breaker second wiring diagram- 8 open 8 closed

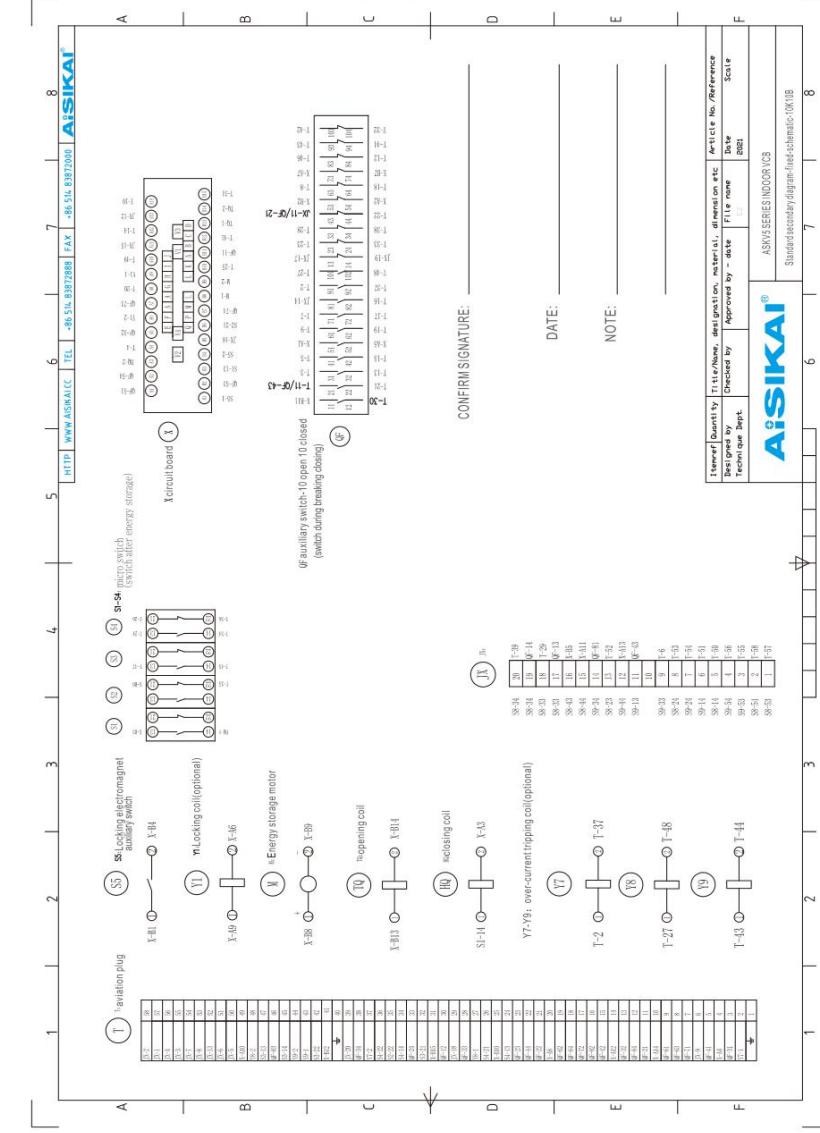


## ELECTRICAL SCHEMATIC DIAGRAM

## Fixed vacuum circuit breaker electrical schematic diagram- 10 open 10 closed



Fixed vacuum circuit breaker secondary wiring diagram- 10 open 10 closed



## ASKV5-40.5 SERIES INDOOR HIGH VOLTAGE VACUUM CIRCUIT BREAKERS



### Circuit Breaker Structure Adopts Integrated Design

Spring operating mechanism and the overall part of the circuit breaker adopt an integrated structural design. The primary main circuit and the mechanism adopt the form of upper and lower layout. The main circuit is located in the upper part of the circuit breaker; the spring operating mechanism and the handcart advance mechanism are located in the lower part of the circuit breaker. The structure is compact and the layout is reasonable.

### Main Circuit Adopts Sleeve Coupling or Solid-sealed Structure

The main circuit of ASKV5-40.5 has 2 types of structures: sleeve coupling and solid-sealed, providing convenient selection for users according to different use places.

**Sleeve coupling type:** the vacuum arc extinguish chamber of the ASKV5 VCB's main circuit is positioned in the enclosed insulating cylinder. The insulating cylinder is made of epoxy resin with reliable mechanical and electrical performance. The cylinder is moulded adopting the advanced automatic pressure gelation (APG) process. The cylinder functions not only a support, and also as insulation between phase and phase, between phase and ground.

The design of the insulating cylinder fully takes into account the requirements of the national standard and the harsh working conditions. It can not only prevent the vacuum arc extinguish chamber from being affected by the external environment, but also prevent dust and foreign matter from entering the main circuit. It also ensures that even in humid, hot and heavily polluted environments, it presents a high resistance state to the voltage effect.

**Solid-sealed structure:** the primary main circuit of circuit breaker uses solid-sealed polar poles with solid insulation technology. The solid-sealed polar poles. The vacuum arc extinguisher and other parts of the primary conductive circuit are sealed directly in a special epoxy resin material using advanced automatic pressure gelation (APG) process to form a main electrical circuit module. Double skirt design is used at the mounting end of the solid-sealed polar pole. The polar pole has the characteristics of large creepage ratio distance, high mechanical strength, high precision of parts, small number of parts, without secondary adjustment and small lap surface. The electric field distribution of the poles is uniform, avoiding the damage to the organic insulation caused by the local electric field concentration. What's more, this structure design can simplify the assembly process of primary main circuit, completely avoid the problem of loosening the primary main circuit connection bolts due to vibration in operation, ensure the high reliability of the primary main circuit connection, and make it possible to realize the maintenance-free primary main circuit of the circuit breaker.

### Reliable Integrated Spring Operating Mechanism

The spring operating mechanism of VCB is a planar layout, with manual energy storage and electric energy storage function. The operating mechanism is placed below the front of the arc extinguishing chamber. This structure design not only can make the whole machine size small, but also can make the operating mechanism performance and the required performance of the arc extinguishing chamber breaking and closing more compatible, reducing the unnecessary intermediate transmission process, reducing energy consumption and noise, so that the operation performance is more reliable.

### Flexible Installation Method

The circuit breaker has two types of installation, fixed and handcart, both of which can realize reliable mechanical "five-proof interlock" very conveniently. It can be directly installed in all types of fixed switch cabinets, and can also be mounted on the handcart of all types of removable switch cabinets.

## MAIN TECHNICAL PARAMETERS

Item	Unit	Technical parameters		
Rated voltage	kV	40.5		
Rated insulation level	Rated short-time power frequency withstand voltage (1min)	kV	95	
	Rated lightning impulse withstand voltage (peak)	kV	185	
Rated frequency	Hz	50/60		
		630	630	1250
		1250	1250	1600
Rated current	A			2000
				2500
				3150
Rated short-circuit breaking current	kA	20	25	31.5
Rated short-time withstand current	kA	20	25	31.5
Rated peak withstand current	kA	50	63	80
4s thermal stable current	kA	20	25	31.5
Rated dynamic stable current	kA	50	63	80
Rated short-circuit closing current (peak)	kA	50	63	80
Rated short-circuit duration	s	4		
Mechanical life	times	10000		
Rated Capacitor group closing inrush current	kA	12.5(frequency not more than 1000Hz)		
Rated single/back-to-back capacitor group breaking current	A	630/400		
Short-circuit breaking current breaking times	times	20		
Secondary circuit power frequency withstand voltage	V	2000		
Rated operating voltage	V	AC110/220 DC110/220		
Rated operation sequence	V	O-0.3s-CO-180s-CO		
Energy storage Time	S	≤15		
Contact opening distance	S	20±2		
Contacting travel	mm	6±1		
Interphase center distance	mm	300±1.5		
Contact closing Bounce Time	ms	≤3		
Three phase opening、closing Non-synchronous characteristic	ms	≤2		
Average opening speed1	m/s	1.4~2.0		
Average closing speed2	m/s	0.6~1.3		
Closing time (rated voltage)	ms	30~70		
Opening time (rated voltage)	ms	20~45		
Contact opening rebound amplitude	mm	≤3		
The allowable wear cumulative thickness of moving and static contacts	mm	3		
Main conductive circuit resistance	μΩ	Handcart type ≤75	Fixed type ≤50	Rated current 1250A and below ≤40
		≤50	≤40	1250A and below

1.Average switching speed is the average speed of 12 mm after the breaker contacts have just been switched off;

2.Average closing speed refers to the speed of 12 mm before closing of circuit breaker contacts.

## Energy Storage Motor Parameters

Type	Rated voltage(V)	Rated input power(W)	Normal working voltage range	Energy storage time at rated voltage(S)
ZYJ55-1	DC110V	100	85%~110%Rated voltage	≤15
	DC220V			

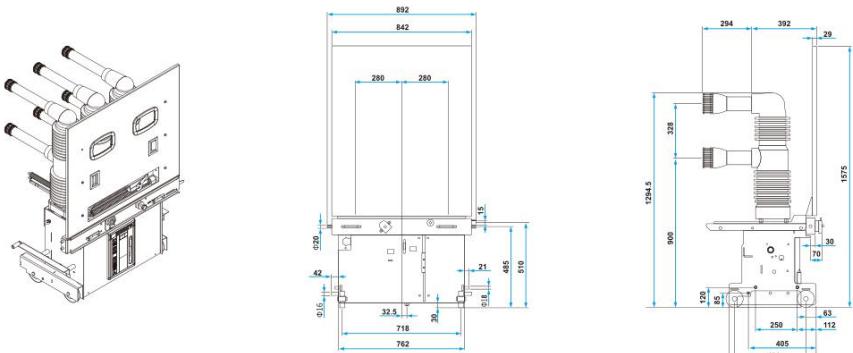
## Technical Parameters of Closing and Opening Electromagnets and Related Electrical Components

Item	Category	Closing electromagnet		Opening electromagnet		Locking electromagnet		Anti-tripping relay	
Rated working voltage (V)		DC220	DC110	DC220	DC110	DC220	DC110	DC220	DC110
Rated working current(A)		1.3	2.6	1.3	2.6	25mA		9.1mA	
Rated power(W)		288	288	288	288	2.7		1.0	
Normal working voltage range		85%~110% Rated voltage		65%~120% of rated voltage. If lower than 30% of rated voltage, the switch cannot open.			-	-	

## Secondary Control Circuit Solution Portfolio

Control voltage	Locking solution	Anti-tripping solution	Under-voltage tripping solution		Over-current tripping solution	
AC220V	With electrical locking	With anti-tripping relay	With under-voltage tripper	With over-current tripper	Number of over-current trippers 2 units/3 units	Action current value 3.5/5/7.5/10
DC220V						
AC110V	Without electrical locking	without anti-tripping relay	Without under-voltage tripper		Without over-current tripper	
DC110V						

40.5kV Handcart Vacuum Circuit Breaker Outline Dimensions(630A~3150A)(1200 Cabinet type)

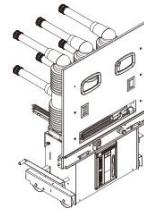
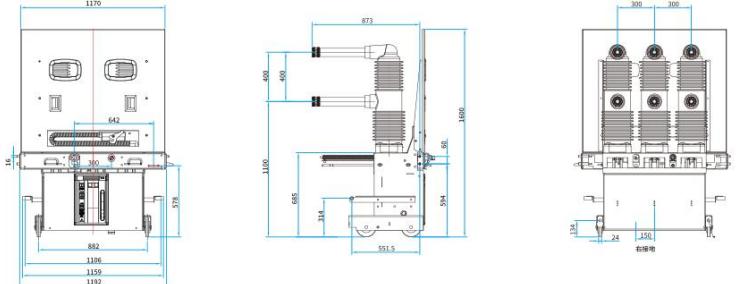


Rated current(A)	Rated short-circuit breaking current(kA)	Star-shaped contact	Static contact size/mm <sup>2</sup>
630		CT-24	Ø35
1250		CT-30	Ø49
1600	31.5	CT-36	Ø55
2000		CT-48	Ø79
2500~3150		CT-64	Ø109

The main circuit adopts solid seal type

## OUTLINE AND INSTALLATION DIMENSIONS

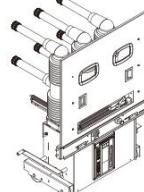
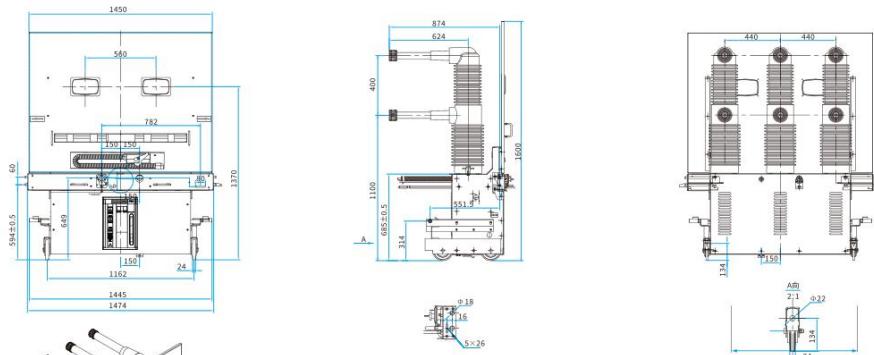
40.5kV Sleeve Coupling Vacuum Circuit Breaker Outline Dimensions(630A~3150A) (1400 Cabinet type)



Matching cabinet width : 1400mm. The main circuit is solidly sealed.

Rated current(A)	Rated short-circuit breaking current(KA)	Star-shaped contact	Static contact size(mm)
630		CT-24	Ø35
1250		CT-30	Ø49
1600	31.5	CT-36	Ø55
2000		CT-48	Ø79
2500~3150		CT-64	Ø109

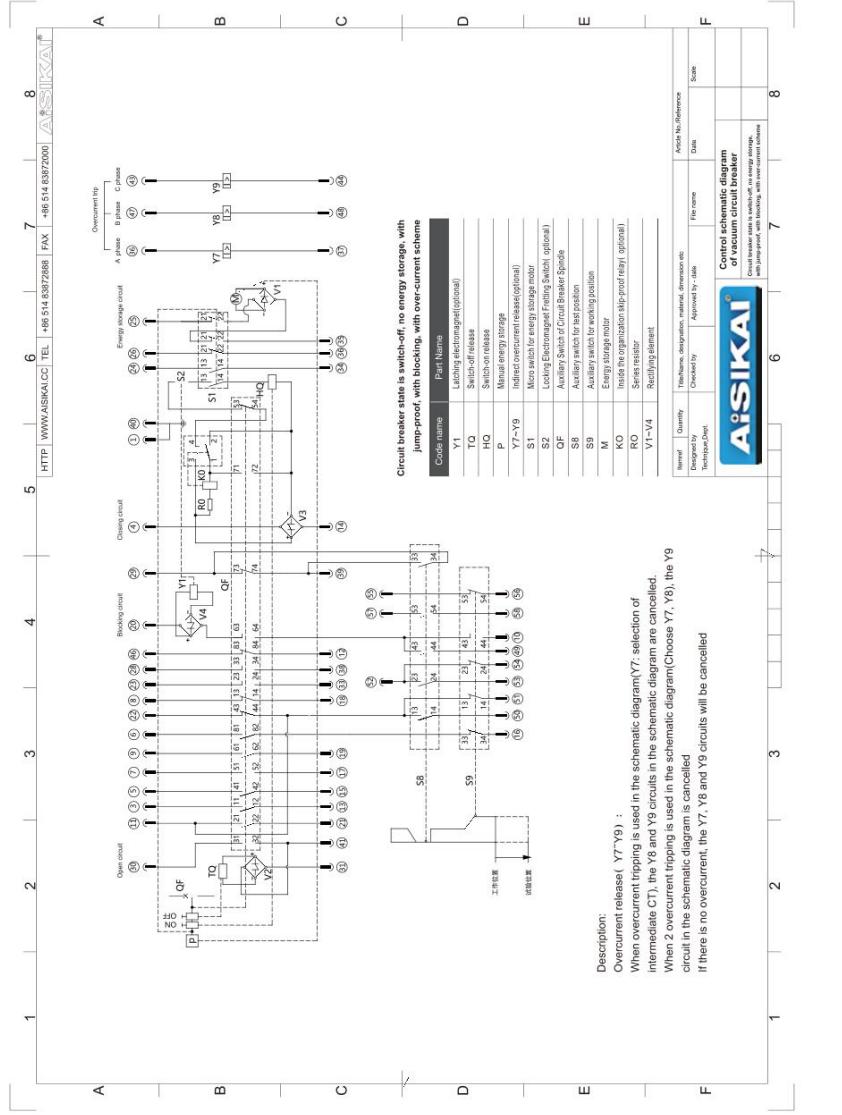
40.5kV Solid-sealed Vacuum Circuit Breaker Outline Dimensions(630A~3150A) (1680 Cabinet type)



Rated current(A)	Rated short-circuit breaking current(KA)	Star-shaped contact	Static contact size/mm
630		CT-24	Ø35
1250		CT-30	Ø49
1600	31.5	CT-36	Ø55
2000		CT-48	Ø79
2500~3150		CT-64	Ø109

The main circuit adopts solid seal type

ASKV5-40.5 high voltage vacuum circuit breaker electrical schematic diagram (2)



ASKV5-40.5 high voltage vacuum circuit breaker electrical schematic diagram (3)

