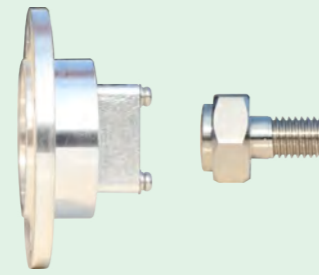


## Part III Other Accessories

### Circuit breaker mechanical characteristic monitoring module

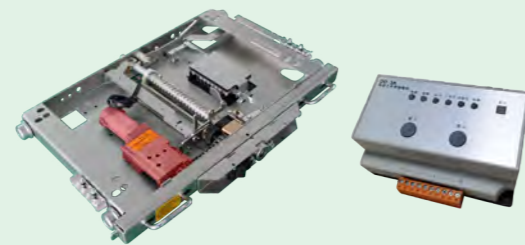
With high-precision sensors and data collection technology, the module monitors the operation of switchgear in real time and sends alerts when abnormal situations occur.



Mechanical characteristic component

### Electric switch cart control module

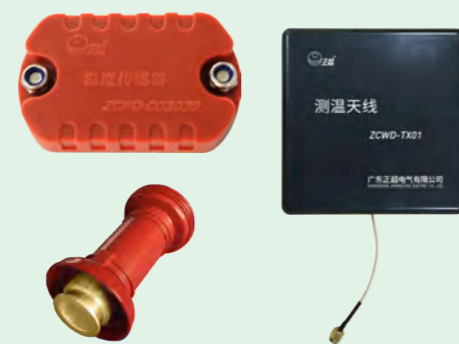
The controller uses a high-performance 32-bit processor, which can quickly detect abnormal conditions, brake the motor and sends alarm signals. With soft start, the module allows easy switch between manual and electric operation. The control module can operate on both strong and weak current inputs to achieve electrical interlocking/control.



Electric chassis cart accessories

### Circuit breaker online temperature module

With the latest-generation of passive RFID wireless technology, the module is highly reliable and accurate. It is also small in size, easy to install, adaptable to various applications.



Temperature monitoring module



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# VS1

INDOOR HIGH VOLTAGE VACUUM CIRCUIT BREAKER  
AND SUPPORTING VEHICLE

Guangdong Zhengchao Electric Co., Ltd.

Contact information: wuym@stzc.com

# Part I Indoor High Voltage Vacuum Circuit Breaker

## I. Product description

The VS1 series is the latest indoor high-voltage vacuum circuit breaker, suitable for substations, power plants, petrochemical plants and other engineering projects that require frequent operation. The VS1 series is suitable for the electrical facilities in three-phase AC current system with rated voltage of 3.6~24kV and frequency of 50Hz for controlling and protecting equipment.

With the latest-generation of modular spring operating mechanism, the product has passed M2/C2/E2 class tests. Both air insulated (with epoxy resin) and solid sealing pole (with automatic pressure gelation technology) types are available.

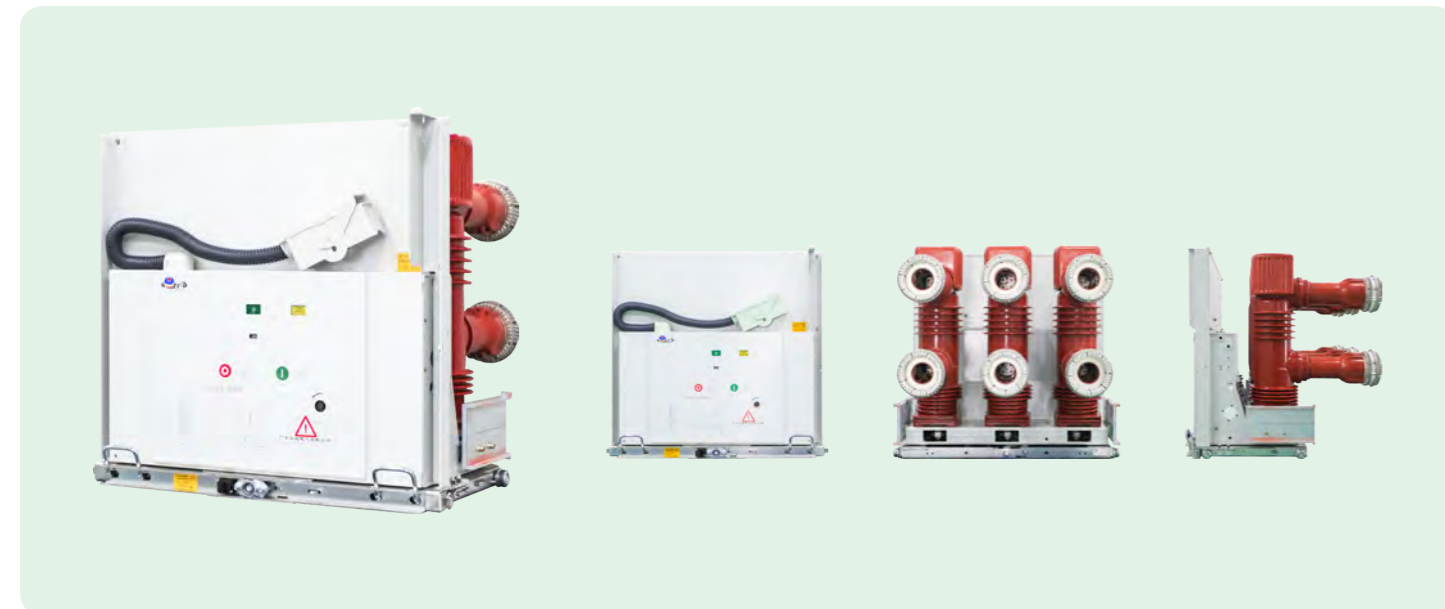
We offer 12kV/24kV circuit breakers with different rated current:

12kV	Rated current of 12kV	630A/1250A/3150A/4000A/5000A
	Rated short-circuit breaking current	25kA/31.5kA/40kA/50kA
24kV	Rated current of 12kV	1250A/3150A
	Rated short-circuit breaking current	31.5kA

Technical specification:  
GB/T 1987-2014, JB/T 8738-2008 and IEC 62271-100:2017.

## 2.Working environment

Altitude	≤ 2000m
Ambient temperature	Indoor: -15°C to 40 °C; daily average ≤35°C
Ambient humidity	Daily average ≤ 95%, monthly average ≤ 90% (relative to +25°C )
Pollution conditions	No more than secondary degree



## 3.Technical features



**Safe and reliable**  
Passed M2/C2/E2 class tests



**Flexible and highly compatible**

- Spring operating mechanism or permanent magnetic operating mechanism for selection
- Secondary plug: 58pins or 64pins for selection
- Fully compatible with main stream interrupter brands



**Low maintenance**  
Embedded pole design with high resistance to contamination



**High insulation**  
Embedded pole design with high insulation capability



**Small footprint**

## 4. Technical parameter

### Electrical parameter

Rated voltage	kV	12	24
Rated frequency	Hz	50	
Rated power frequency withstand voltage (1min)	kV	42(fracture 48)	65 (fracture 79)
Rated lightning impulse withstand voltage	kV	75 (fracture 85)	125 (fracture 145)
Control circuits frequency withstand voltage(1min)	V	2000	
Supply voltages of control circuits	V	DC110/220, AC110/220	
Rated current	A	630 1250 3150 4000 5000	1250 3150
Rated short circuit breaking current	kA	25 31.5 40 50	31.5
Rated short-time withstand current (4s)	kA	25 31.5 40 50	31.5
Rated short-circuit closing current	kA	63 80 100 125	80
Rated peak withstand current	kA	63 80 100 125	80
Rated breaking current of single/back-to-back capacitor bank	A	630/400 800/400	630/400
Rated operation sequence		O-θs-CO-180s-CO	

### Mechanical parameter

Mechanical life	Times	10000	
Rated short circuit current breaking times	Times	30	
Contact erosion limit	mm	3	
Opening time	ms	≤50	30±10
Closing time	ms	≤70	45±10
Contact closing bounce time	ms	≤2	
Simultaneity of poles during closing and opening	ms	≤2	

Marks: ① 4000A and 5000A are under wind cooling conditions;  
② θ for circuit breakers with reclosing function, θ is 0.3 s; For circuit breakers without reclosing function, θ is 180 s;

# Part II Handcart Accessories

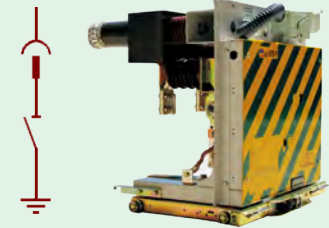
### ① Isolation handcart

Used in PT cabinets (fixed installation of PT and other components) bus-tie cabinets



### ④ Grounding handcart

Used during switchgear testing and maintenance when busbars connect to the ground wire



### ② Fuse handcart

Used in substation transformer cabinet or PT cabinet (PT and lightning arrester are installed in switch cabinet)



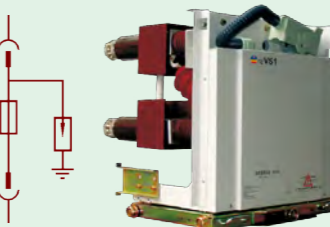
### ⑤ Undermount lighting arrester handcart

Applied in the front lower section of the PT cabinet and can be used together with a PT handcart



### ③ Fuse & lighting arrester handcart

Used in PT cabinet (PT fixed installation)



### ⑥ Valve inspection handcart

Used to check the opening and closing of the valve baffle in the process of pushing and withdrawing the removable switch gear



## Technical parameter

Parameter	Unit	Data	
Rated voltage	kV	12	24
Rated frequency	Hz	50	
Rated power frequency withstand voltage (1min)	kV	phase to phase/ phase to earth: 42	phase to phase/ phase to earth: 65
Rated lightning impulse withstand voltage	kV	phase to phase/ phase to earth: 75	phase to phase/ phase to earth: 12
Interphase center distance	mm	210±2	275±2
Weight	Kg	100	200
Dimensions	mm	640*504*596	838*770*747