

Xinchi (China) Electric Co., LTD.

└ Add: Fangdouyan East Industrial Zone, Liushi Town, Yueqing, Zhejiang, China
Tel: 0086 577 62890205
Fax: 0086 577 62890578
Phone: 0086 13506679203
E-mail: julie@chinasuntree.com
Http: [//www.chinasuntree.com](http://www.chinasuntree.com)

ShangHai XinChi Electric Co., LTD.

└ Add: No. 65 Haifeng Road, Baoshan District, Shanghai, China
Tel: 0086 21 51619313
Phone: 0086 13757784653
E-mail: tracy@chinasuntree.com
Http: [//www.chinasuntree.com](http://www.chinasuntree.com)

YueQing XinChi IMP&EXP. Co., LTD.

└ Add: Fangdouyan East Industrial Zone, Liushi Town, Yueqing, Zhejiang, China
Tel: 0086 577 61788115
Fax: 0086 577 62890578
Phone: 0086 13567768082
E-mail: tony@chinasuntree.com
Http: [//www.chinasuntree.com](http://www.chinasuntree.com)





Lectotype manual of Intelligent
High-Voltage Electrical Products





TECHNOLOGY INNOVATION
WORLD-CLASS REPUTATION

PRESIDENT'S ADDRESS



With the development of Chinese electric market, Suntree Electric also grows and expands step by step. As a "people's security guards" production plant, we shoulder the glory mission of servicing the society, creating wealth for customers, helping employee realize their value. With the ideal and faith of service the county and society, we strive to innovate technology in the complex economic situation and increasing industrial competition, showing a stronger comprehensive competitive strength and performance growth ability.

Now the main businesses are on track and flourishing thanks to the company's improved corporate governance structure, good quality of assets, sound inner control system, a galaxy of talents, operation compliance and management standard.

A nine-layered terrace must be constructed from its very base, a journey of a thousand miles begins with a single step. Under the situation of opportunities and challenges exist side by side, hope and difficulty coexist in the same, we'll adhere to the management idea of integrity, standard, profession and win-win to provide the people with high quality security guard, provide the customers with first-class service and provide the employee with wide development space, building Suntree Electric into a modern manufacturing enterprise which contributes to the country, responsible to the society and attracts the customers. Looking back, we'd like to express our thanks to the support from all friends; looking ahead, we are full of confidence to work with all friends to create a better future.

COMPANY PROFILE

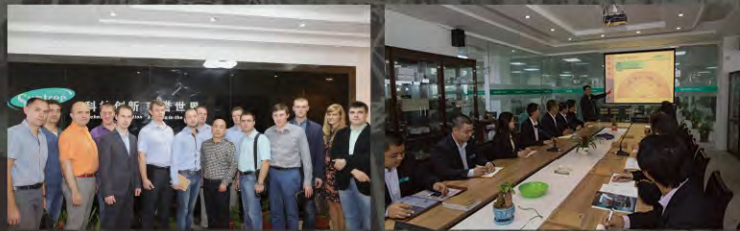
Suntree Electric Co., Ltd. is a non-area-limit company dedicated to intelligent high-low pressure electrical industry. Since establishment, the company has been devoting to research and development of intelligent electric system. With the management idea of "technological innovation, world famous" and the aim of creating leading intelligent electric brand, the company actively integrates the electric and internet information cutting-edge technology of the world to provide the clients with systematized product and solution in such four areas of smart grid product, intelligent electrical element, intelligent electric energy management and new energy electrical system.

Suntree Electric fully carries out and implements the management systems of ISO9001:2008, ISO14001:2004 and OHSAS18001, takes the lead in passing the CE, CB, Nemko, SAA, VDE, and domestic CCC authentications. The excellent quality and superior usage experience come from the advanced production equipment, exquisite detection instruments, senior technical team and the continuously introduced technological processes, which also provide powerful guarantee for R & D and quality upgrade of Suntree products as well as innovation of the management.

China now has announced the comprehensive power grids transformation strategy and accelerated construction of ultra-high voltage grid and urban and rural smart power grids, with such opportunity, Suntree will upgrade the technical content of high voltage electrical products, strengthen resource allocation capacity, safety level and operating efficiency of power grids, reinforce the interaction of power grids and power supply with users, build a unified smart power grid. All high-voltage series of products have been approved by the authority. Suntree will bring the High-voltage Electrics to a new age of intelligent, modularized and integrated. Suntree has the honor to be entitled Excellent Supplier by the State Grid Corporation of China successively for many years. The products are well received in more than one hundred countries and regions due to excellent quality and stable performances.

We'll seize the mission and opportunity given to us by the era and create a new height of career with international and domestic partners. The company will attract the customers by virtue of high quality products and service, and strive to promote our brand go to the world.

Suntree Electric leads the future.





High Voltage

CERTIFICATION





CB

CE



ROHS



IEC

Nemko



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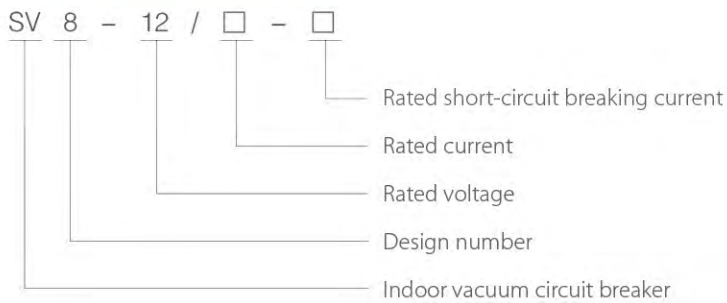
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SV8(VS1)-12 Series Handcart Type Indoor Vacuum Circuit Breaker

SUMMARY

SV8(VS1)-12 series indoor vacuum circuit breaker is a three-phase AC 50Hz, rated voltage of 12kV indoor switchgear, control and protection for industrial and mining enterprises, power plants and substations, electrical facilities, and for frequent operation place. Adopting SV8 operating mechanism and circuit breaker integrated, design can be used as a fixed installation unit can also be equipped with special advance mechanism, the composition of handcart unit used. Some of the main circuit can use the whole solid seal post, in order to achieve smaller circuit breakers, high reliability, maintenance-free, can be equipped with KYN28A-12 (GZS) and other handcart switch cabinet in the home can also be used with fixed XGN switchgear.

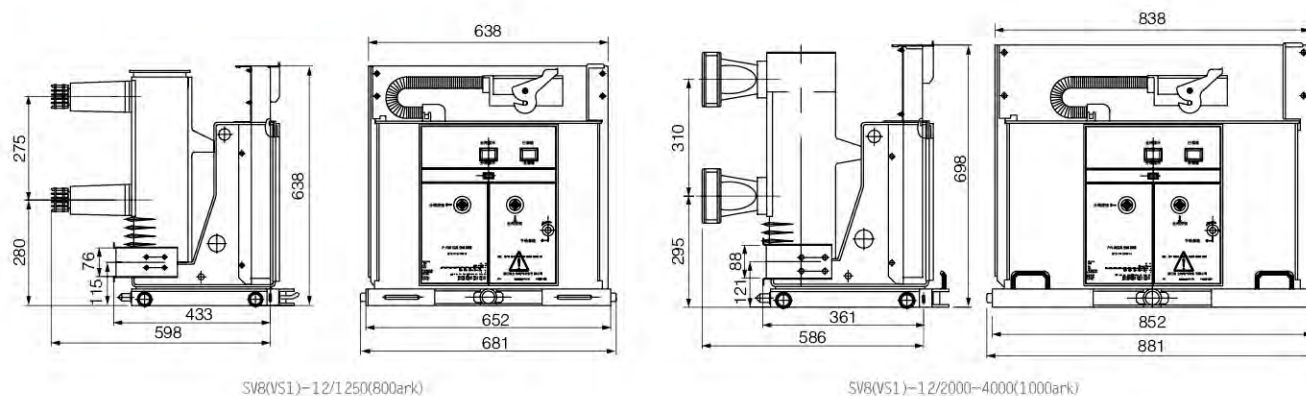
MODELS AND IMPLICATIONS



THE USE OF ENVIRONMENTAL CONDITIONS

- Ambient temperature: not higher than +40℃ ,not less than -10℃ (at -30℃ to allow storage and transportation)
- Altitude: not exceed 1000m.
- Relative humidity: daily average of not more than 95%, saturated vapor pressure daily average of not more than 2.2×10^3 MPa, month average not more than 1.8×10^3 MPa.
- Earthquake intensity: not more than eight.
- No fire, explosion hazard, serious filthy, chemical corrosion, as well as places of intense vibration.

GENERAL STRUCTURE DRAWING AND INSTALLATION SIZE



SV8(VS1)-12/1250(800ark)

SV8(VS1)-12/2000-4000(1000ark)

MAINLY TECHNICAL PARAMETERS

NO.	Item	Units	Parameters		
1	Rated voltage	kV	12		
2	Rated insulation level	kV	Rated Lightning Impulse voltage tolerance		
			75		
3	Rated short-circuit breaking current	kA	1min Frequency voltage		
			42		
3	Rated short-circuit breaking current	kA	20/25	31.5	40
4	Rated current	A	630 1250	630 1250 1600 2000 2500 3150	1250 1600 2000 2500 3150 4000
5	Rated thermal stability of current (RMS)	kA	20/25	31.5	40
6	Dynamic Stability rated current (peak)		50/63	80	100
7	Rated short-circuit closing current (peak)		50/63	80	100
8	Rated short-circuit breaking current breaking number	Times	50		
9	Frequency tolerance of the secondary circuit voltage (1min)	V	2000		
10	Rated operating sequence		0-0.3s-C0-180s-C0		
			0-180s-C0180sC0		
11	Rated thermal stabilization time	S	4		
12	Rated a single/back-to-back electric current breaking device group	A	630/400 800/400(40kA)		
13	Mechanical life	Times	10000		

SV8(VS1)-24 Series Handcart Type Indoor Vacuum Circuit Breaker

SUMMARY

SV8(VS1)-24 series handcart type indoor vacuum circuit breaker is rated voltage 24kV, three-phase AC 50Hz Indoor high-voltage switchgear, apply for power stations, substations, and industrial and mining enterprises to control or protection transmission and distribution systems, specially for the important high altitude breaking load and frequent operation place.

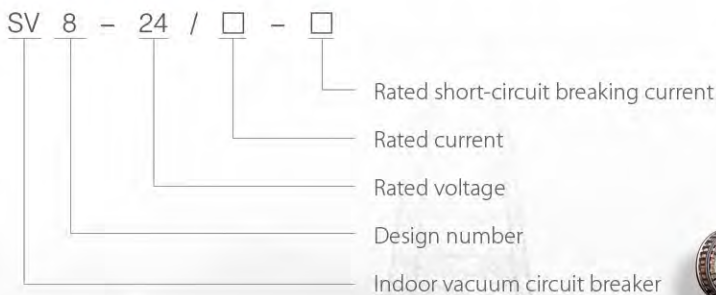
Circuit breaker manufacturing accordance with our national standard GB1984-2003<AC high voltage circuit breakers>, DL/T403-2000<3.6~ 40.5kV Indoor Vacuum Circuit Breaker ordering technology>; and the related IEC standards And reliable interlock function.

Circuit breaker operating mechanism for the spring energy storage type, can use AC and DC energy storage operations, can also be used manually.

Circuit breaker can be equipped with long life permanent magnetic actuator, mechanical life can reached 60000 times, can be used for extremely Frequent operation place.

Circuit breaker designed to repackaging the structure before and after, both can be used as a fixed installation unit, Can also be equipped with the chassis as used in the mounted unit.

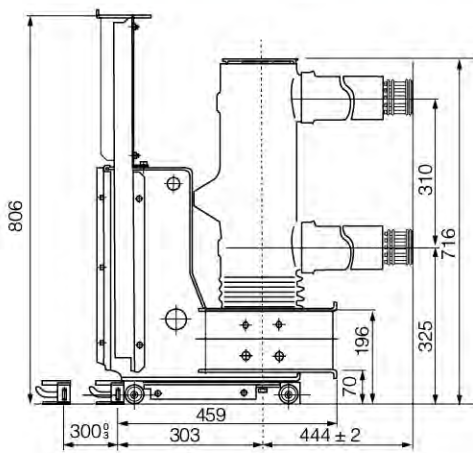
MODELS AND IMPLICATIONS



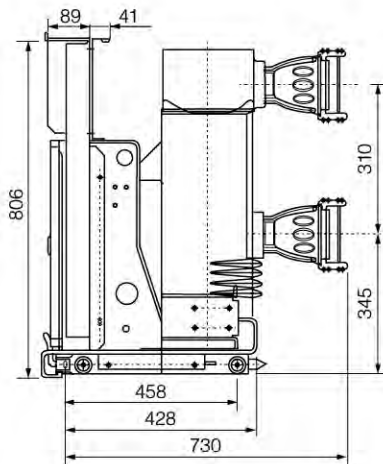
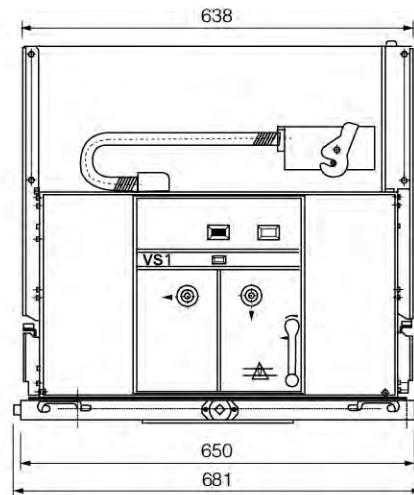
THE USE OF ENVIRONMENTAL CONDITIONS

- Ambient temperature: not higher than +40°C , not less than -15°C .
- Altitude: not exceed 1000m.
- Relative humidity: daily average of not more than 95%, month average of not more than 90%.
- Earthquake intensity: not more than eight.
- No fire, explosion hazard, serious filthy, chemical corrosion, as well as places of intense vibration.

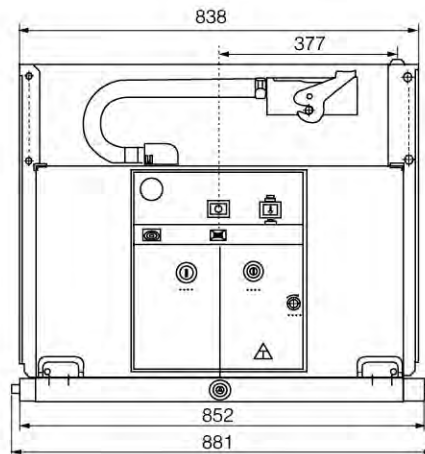
GENERAL STRUCTURE DRAWING AND INSTALLATION SIZE



SV8(VS1)-24/1250(800ark)



SV8(VS1)-24/2000-3150(1000ark)



MAINLY TECHNICAL PARAMETERS

NO.	Item	Units	Parameters
1	Rated voltage	kV	24
2	Rated Frequency	Hz	50
3	Rated Current	A	630、1250、1600、2000、3150
4	Rated short-circuit breaking current	kA	20、25、31.5
5	Rated short-circuit closing current (peak)	kA	50、63、80
6	Rated short-circuit duration	s	4
7	Rated short-circuit breaking current breaking number	Times	50
8	Rated operating sequence		0-0.3s-C0-180s-C0
9	Rated lightning impulse withstand voltage	kV	125
10	1min Power frequency withstand voltage	kV	65
11	Closeing time	ms	≤ 70
12	Opening time	ms	≤ 50
13	Mechanical life	Times	20000
14	Rated Storage and operation voltage	V	≈ 220/110
15	Breaking life	ms	≤ 80
16	Storage life	s	≤ 10

ADJUST THE PARAMETERS OF MECHANICAL PROPERTIES

NO.	Item	Units	Parameters
1	Contact distance	mm	14±1
2	Contact Overtravel	mm	3.5±0.5
3	Closeing speed	m/s	1.0±0.2
4	Opening speed	m/s	1.3±0.2
5	Contact closing spring time	ms	≤ 2
6	Rated contact pressure	N	20kA(2400±200) 25kA(2400±200) 31.5kA(3100±200)
7	Three phase closing opening asynchrony	ms	≤ 2

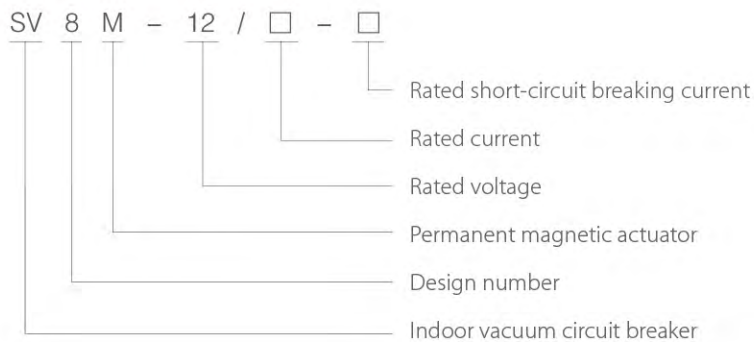
SV8(VS1)M-12 Series

Permanent Magnet Type Indoor High Voltage Vacuum Circuit Breaker

SUMMARY

SV8(VS1)M-12 series permanent magnet-type indoor high voltage vacuum circuit breaker is a three-phase AC 50Hz, rated voltage of 12kV indoor switchgear. It loaded the company with its own research and development of permanent magnetic actuator for industrial and mining enterprises, power generation and substation facilities as electrical control and protection purposes. The product has high reliability and long life characteristics, especially suitable for frequent operation, repeatedly breaking conditions, such as short-circuit current of the place.

MODELS AND IMPLICATIONS



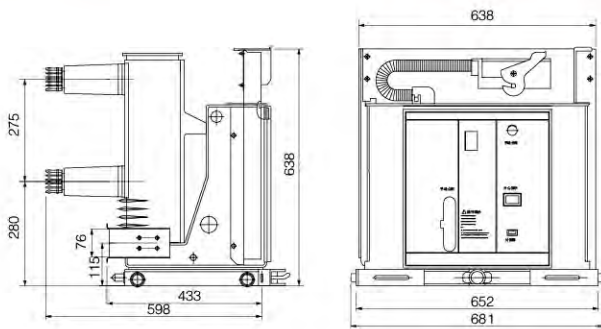
MAIN FEATURES

- High reliability, long life, maintenance-free.
- China's first permanent magnetic actuator mechanical life of up to 100,000 times.
- With the traditional actuator compared without mechanical removal, locking devices, parts and components significantly reduced the number of hours worked with only one moving parts, low failure rate.
- Actuator performance and interrupter breaking. Closing the features needed for a very consistent.
- All sub-reliable operation of the bistable gate.
- With anti-skip function.
- With controlling power low-voltage alarm refuse to close.
- Mechanical manual sub-sub-gate and electric gate at the same rate, in the secondary power supply fault conditions, the application of an emergency sub-gate.
- AC and DC energy storage operation type, operating current is less than 2A, can be done O-CO-O operation within 2 hours after the blackout.
- Highly reliable operation of control circuit module that can be tolerated in the run-time lightning, surge and other harsh conditions.
- Versatility, installation size and ZN63 VS1 compatible with other products.

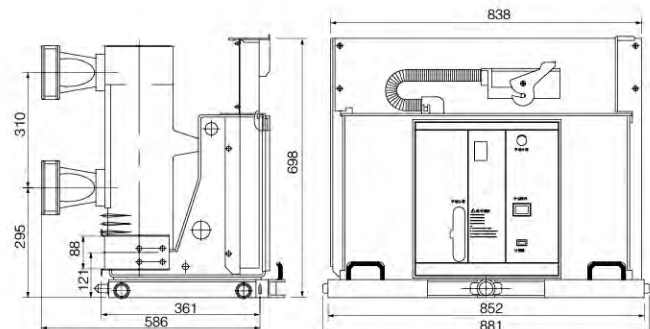
THE USE OF ENVIRONMENTAL CONDITIONS

- Ambient temperature: not higher than +40°C , not less than -25°C at -30°C to allow storage and transportation.
- Altitude: not exceed 1000m, plateau type not exceed 3000m.
- Relative humidity: daily average is not more than 90%, month average is not more than 95%, saturated vapor pressure daily average is not more than 2.2×10^{-3} MPa, month average is not more than 1.8×10^{-3} MPa. The temperature dropped rapidly during the period of high humidity is that it may Gel.
- Earthquake intensity: not more than eight.
- No fire, explosion hazard, serious filthy, chemical corrosion, as well as places of intense vibration.

GENERAL STRUCTURE DRAWING AND INSTALLATION SIZE



SV8(VS1)-12/630-1600(B00ark)



SV8(VS1)-12/2000-4000(1000ark)

MAINLY TECHNICAL PARAMETERS

NO.	Item	Units	Parameters		
1	Rated voltage	kV	12		
2	Rated insulation level		42		
	Rated Lightning Impulse voltage tolerance		75		
3	Rated current	A	630-1250	1250-3150	1250-4000*
4	Rated short-circuit breaking current	kA	20-25	31.5	40
5	Rated short-circuit closing current (peak)		50	80	100
6	Dynamic Stability rated current (peak)		50	80	100
7	Rated thermal stability of current (RMS)		20	31.5	40
8	Rated short-circuit breaking current breaking number	Times	30	30	20
9	Rated thermal stabilization time	S	4		
10	Rated operating sequence	0-0.3s-C0-180s-C0			
		0-180s-C0180sC0			
11	Mechanical life	Times	≥ 50000	≥ 50000	≥ 30000**
12	Permanent magnetic actuator and transmission part of the Mechanical life	Times	≥ 100000	≥ 100000	≥ 100000
13	Rated single capacitor breaking current	A	630		
14	Rated back to back capacitor breaking current		400		
15	Rated breaking current-step	kA	12.6	16	

*There should be greater than the rated current 3150A ventilation measures.

**According to the chosen vacuum interrupter and the disparity.

Adjust the parameters of mechanical properties

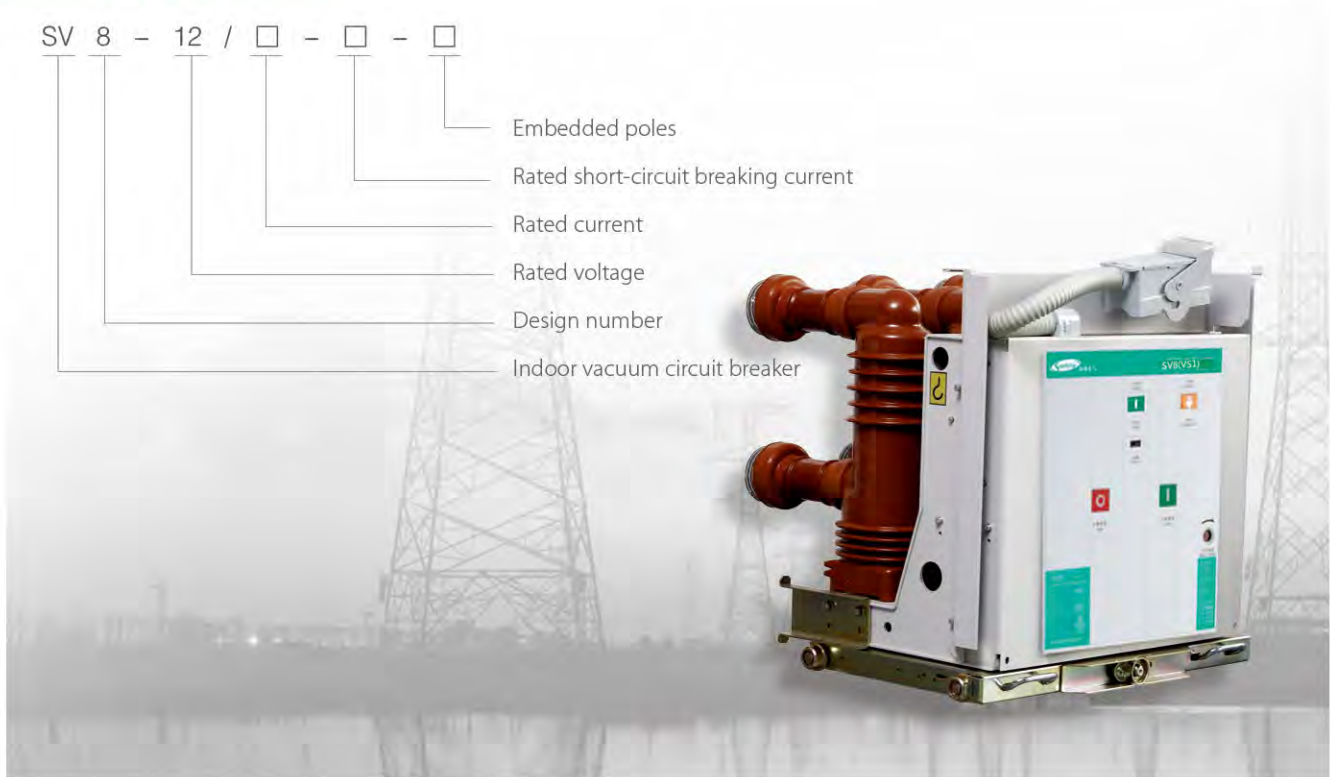
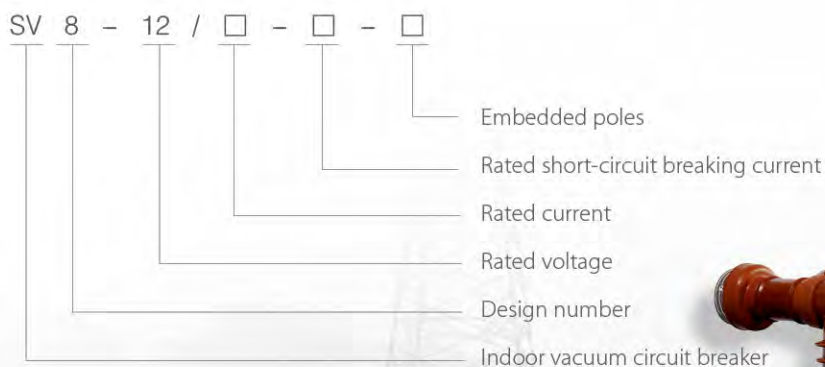
No	Item	Units	Parameters		
1	Contact distance	mm	11 ± 1		
2	Contact travel		3.5 ± 0.5		
3	Three phase opening synchronism	ms	≤ 2		
4	Contact closing spring time		≤ 2	≤ 3(40kA)	
5	Phases center distance	mm	210	275	
6	Closing contact pressure	N	20kA 2000 ± 200	31.5kA 3100 ± 200	40kA 4500 ± 300
7	Leading electrical circuit resistance	μΩ	60	45	30
8	Average opening speed	m/s	1.1 ± 0.2		
9	Average closing speed		0.7 ± 0.2	0.8 ± 0.2	
10	Opening time	ms	30~60		
11	Closing time		50~100		
12	Action Static Contact cumulative wear thickness allows	mm	3		

SV8(VS1)-12 Series Embedded Poles Type Indoor High Voltage Vacuum Circuit Breaker

SUMMARY

SV8(VS1)-12 series embedded poles type indoor high voltage vacuum circuit breaker adopt solid insulation structure, use of advanced solid epoxy sealing technology, the first time, the vacuum interrupter. A leading electrical circuit.insulation and other support to become an integrated combination of solid seal pole. Successfully from a fundamental solution of the vacuum breaker gas environment, tolerance issues, make it more broad. Integrated solid-pole closure of the fluent use of a self-ventilation technology, cleverly solved the structure of solid insulation caused by heat dissipation. SV8-12 series embedded poles type indoor high voltage vacuum circuit breaker is the first to achieve maintenance-free concept of a circuit breaker. Its high-life vacuum interrupter chamber as well as solid cast epoxy sealing technology applications to ensure an integrated solid-pole sealed maintenance-free, with high reliability using permanent magnetic actuator of the actuator to ensure maintenance-free, electronic control parts reject the traditional auxiliary switch and replaced by photoelectric proximity switches, and use the whole power and intelligent electronic control unit ensures that electronically controlled part of the maintenance-free.

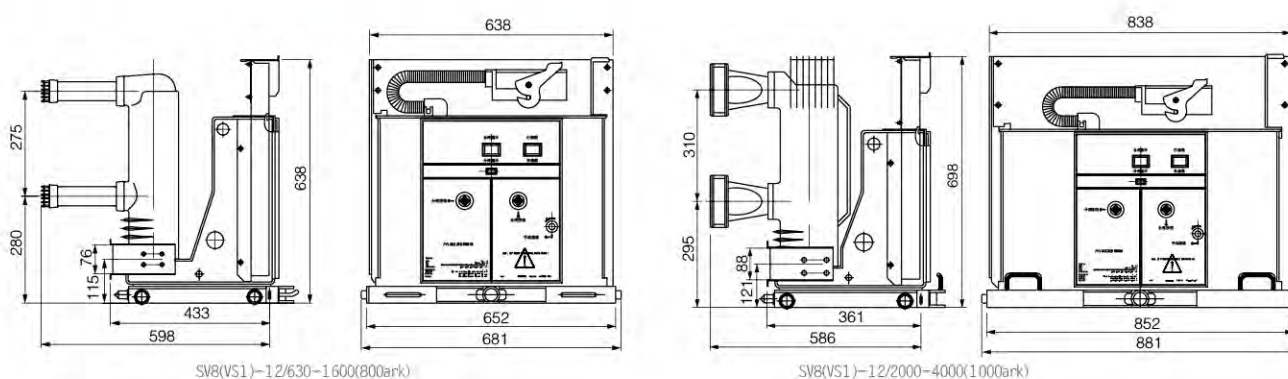
MODELS AND IMPLICATIONS



THE USE OF ENVIRONMENTAL CONDITIONS

- Ambient temperature: not higher than +40°C ,not less than -15°C (at -30°C to allow storage and transportation)
- Altitude: not exceed 1000m.
- Relative humidity: daily average of not more than 90%, month average of not more than 95%.
saturated vapor pressure daily average of not more than 2.2×10^{-3} MPa, month average not more than 1.8×10^{-3} MPa.
- Earthquake intensity: not more than eight.
- No fire, explosion hazard, serious filthy, chemical corrosion, as well as places of intense vibration.

GENERAL STRUCTURE DRAWING AND INSTALLATION SIZE



MAINLY TECHNICAL PARAMETERS

NO.	Item	Units	Parameters		
1	Rated voltage	kV	12		
2	Rated insulation level	Rated Lightning Impulse voltage tolerance 1min Frequency voltage	75		
			42		
3	Rated short-circuit breaking current	kA	20/25	31.5	40
4	Rated current	A	630 1250	630 1250 1600 2000 2500 3150	1250 1600 2000 2500 3150
5	Rated thermal stability of current (RMS)	kA	20/25	31.5	40
6	Dynamic Stability rated current (peak)		63	80	100
7	Rated short-circuit closing current (peak)		63	80	100
8	Rated short-circuit breaking current breaking number	Times	50		
9	Frequency tolerance of the secondary circuit voltage (1min)	V	2000		
10	Rated operating sequence	0-0.3s-C0-180s-C0			
		0-180s-C0180sC0			
11	Rated thermal stabilization time	S	4		
12	Rated a single/back-to-back electric current breaking device group	A	630/400 800/400(40kA)		
13	Mechanical life	Times	10000		

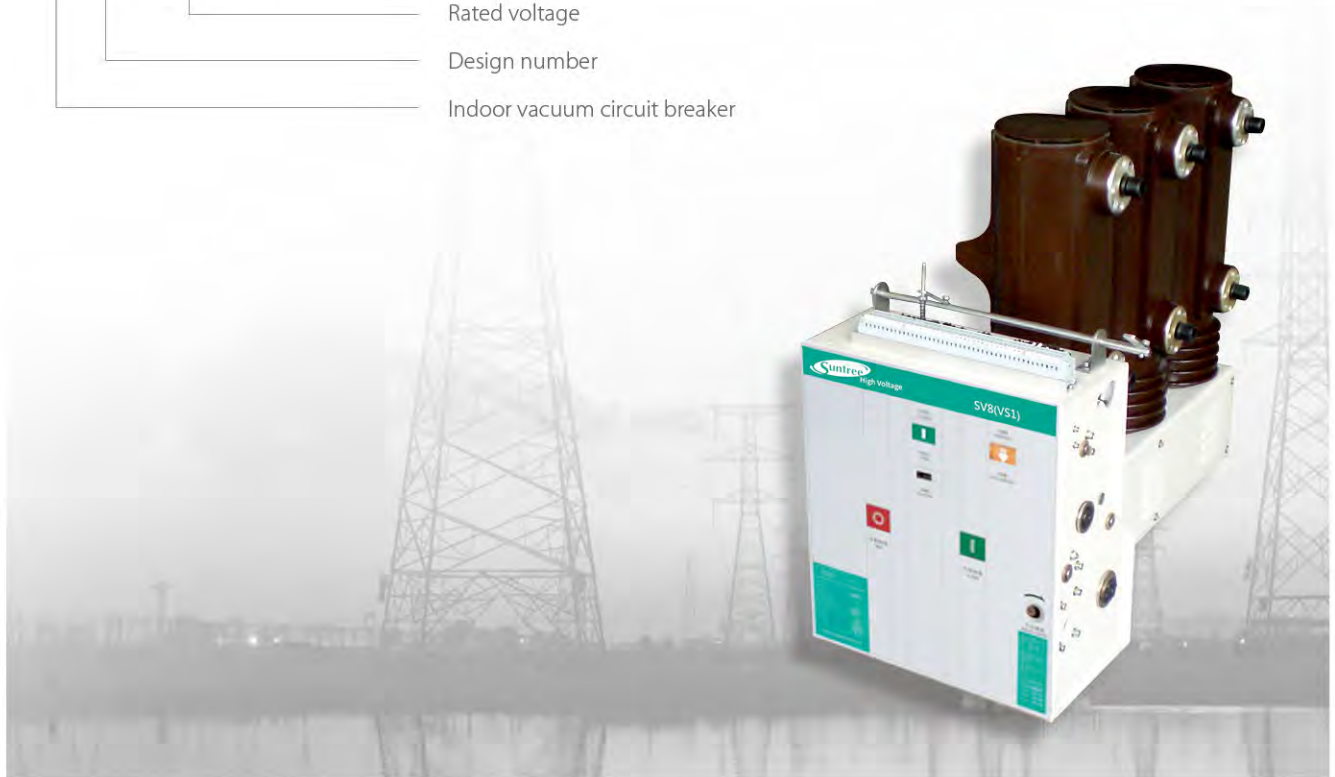
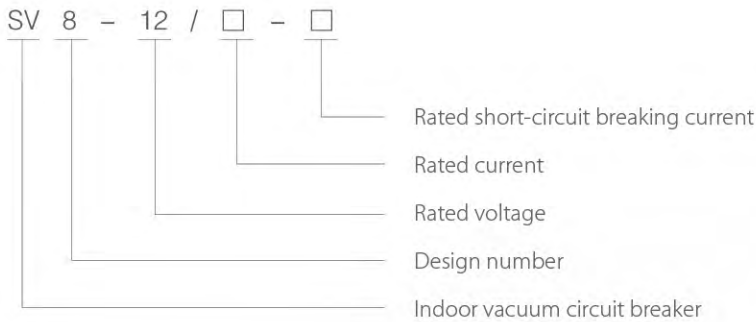
SV8(VS1)-12 Series Side Installation Type Indoor High Voltage Vacuum Circuit Breaker

SUMMARY

SV8(VS1)-12 series side installation indoor high voltage vacuum circuit breaker is Indoor high voltage switchgear, Applies to rated voltage 12kv, frequency 50Hz three-phase power system,Electrical protection and control as the use of vacuum circuit breaker as a result of the special advantages, in particular the need for frequent operation under the rated current or short-circuit current breaking many places.

SV8(VS1)-12 series side installation indoor high voltage vacuum circuit breaker using fixed installation, the main switchboard for the fixed, the circuit breaker can be used alone, but also for the ring network power supply, box-type variable, or a variety of non-standard power supply system.

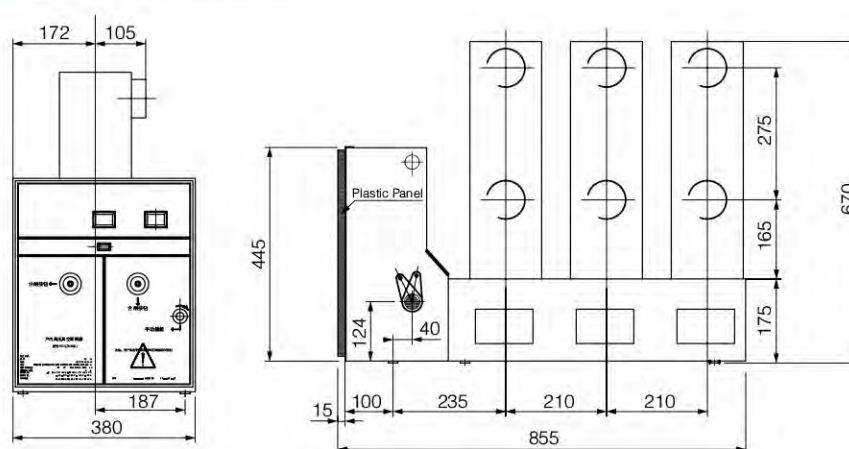
MODELS AND IMPLICATIONS



THE USE OF ENVIRONMENTAL CONDITIONS

- Ambient temperature: not higher than +40°C ,not less than -15°C (at -30°C to allow storage and transportation).
- Altitude: not exceed 1000m.
- Relative humidity: daily average of not more than 90%, month average of not more than 95%.saturated vapor pressure daily average of not more than 2.2×10^3 MPa, month average not more than 1.8×10^3 MPa.
- Earthquake intensity: not more than eight.
- No fire, explosion hazard, serious filthy, chemical corrosion, as well as places of intense vibration.

OVERALL AND INSTALLATION DIMENSION



MAINLY TECHNICAL PARAMETERS

NO.	Item.	Units	Parameters.	
1	Rated voltage	kV	12	
2	Rated insulation level	kV	Rated Lightning Impulse voltage tolerance	
			75	
			1min Frequency voltage	
			42	
3	Rated short-circuit breaking current.	kA	20/25	31.5
4	Rated current	A	630	630
			1250	1600
5	Rated thermal stability of current (RMS)	kA	20/25	31.5
6	Dynamic Stability rated current (peak)		63	80
7	Rated short-circuit closing current (peak)		63	80
8	Rated short-circuit breaking current breaking number	Times	50	
9	Frequency tolerance of the secondary circuit voltage (1min)	V	2000	
10	Rated operating sequence		0-0.3s-C0-180s-C0	
11	Rated thermal stabilization time	S	4	
12	Rated a single/back-to-back electric current breaking device group	A	630/400	
13	Mechanical life	Times	10000	

ZN12-40.5 Series

Indoor High Voltage Vacuum Circuit Breaker (ACTUATOR)

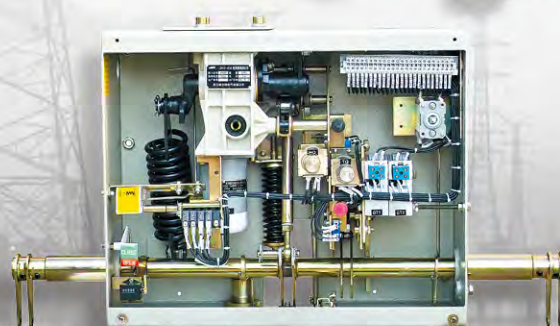
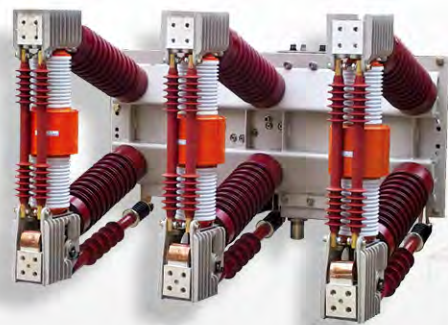
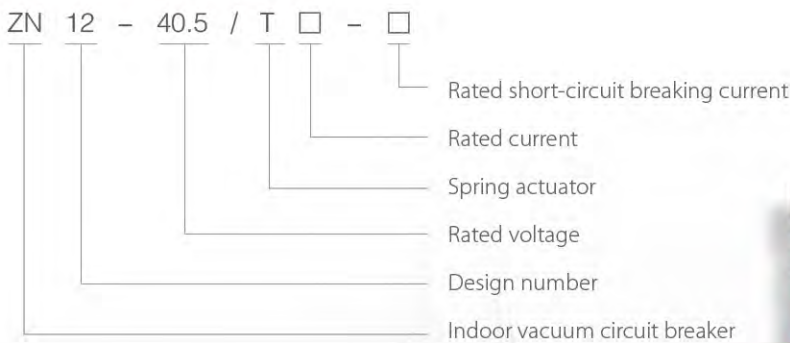
SUMMARY

ZN12-40.5 series indoor high voltage vacuum circuit breaker 35KV three-phase AC 50HZ applied to power system, the circuit breaker for the ceramic structure, using the longitudinal magnetic field contacts, is small, the proliferation of breaking arc generated when current distribution in the contact on the same local melting phenomenon does not occur, but also has a low arc energy voltage (20-200V) and low chopping current (4-5A), and operate with high reliability organizations.

The circuit breaker with spring energy storage sector, can exchange energy storage, or DC operation, can also be used manually. The circuit breaker uses a special contact material, so interrupter high breaking capacity, and has a long electrical life.

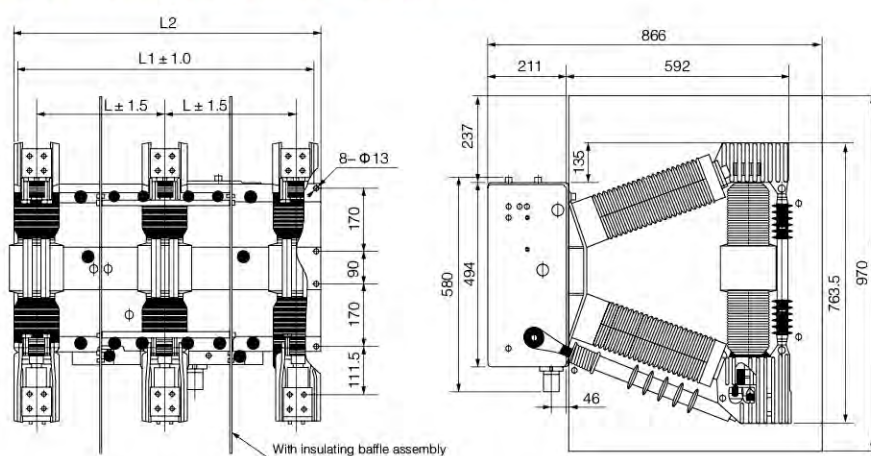
The switch of simple structure, open high capacity, long life operation of fully functional no explosion risk, maintenance is simple, suitable for power plants, substation control and distribution system, protection switching, particularly suitable for heavy duty and frequent breaking operation place.

MODELS AND IMPLICATIONS



ZN12 操动机构 ZN12 Actuator

GENERAL STRUCTURE DRAWING AND INSTALLATION SIZE



Insulating partition components

Inter-phase	L	L1	L2	Remark
ZN12-40.5	350	800	830	With insulating baffle assembly
ZN12-40.5	460	1128	1175	

MAINLY TECHNICAL PARAMETERS

No	Item	Units	Technical parameters			
1	Rated voltage	kV	40.5			
2	Rated current	A	1250		1600	2000
3	Rated short-circuit breaking current	kA	20	31.5	25	31.5
4	Dynamic current (peak)	kA	50	80	63	80
5	4S Thermal current	kA	20	31.5	25	31.5
6	Rated short circuit making current (peak)	kA	50	80	63	80
7	Rated short-circuit current breaking times	Times	20			
8	Rated operating sequence		0-0.3s-C0-180s-C0			
9	Rated insulation level	kV	1min power frequency withstand voltage			
			95			
			Lightning impulse withstand voltage (peak)			
			185			
10	Mechanical life	Times	10000			
11	Rated single capacitor device ON-OFF current	A	630			
12	Rated single back-to-back capacitor device current	A	400			
13	Rated voltage electrical energy storage	V	AC、DC: 110; 220			
14	Energy Storage Power Rating	W	275			
15	Electrical Energy Storage Energy Storage time	S	≤ 15			
16	Hop Tripping coil rated voltage	V	AC、DC: 110; 220			
17	Hop Tripping coil rated current	A	1.91(AC)、0.89(DC)			
18	Over-current tripping device rated current	A	5			
19	Contact opening distance	mm	25±2			
20	Contact Contact trip	mm	6±2			
21	At the different period of three consistency	ms	≤ 2			
22	Contact closing bounce time	ms	≤ 3			

ZN23-40.5 Series

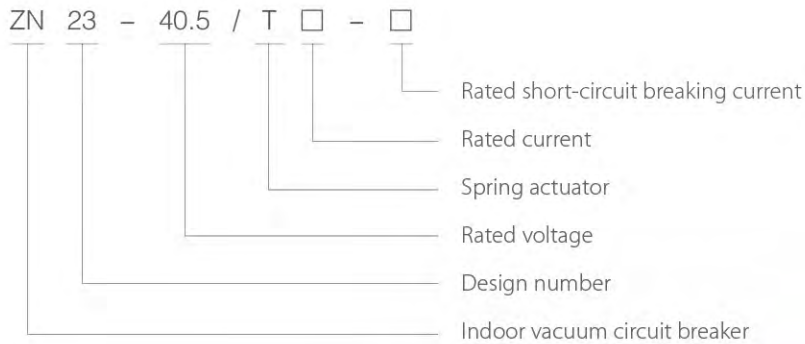
Handcart Type Indoor Vacuum Circuit Breaker

SUMMARY

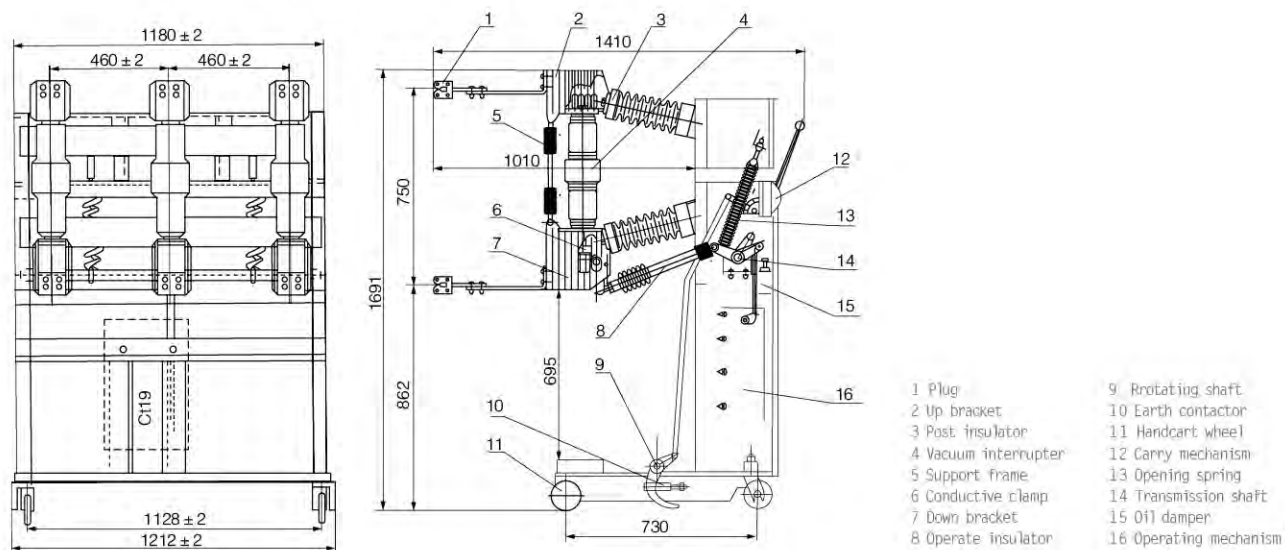
ZN23-40.5 series handcart type indoor vacuum circuit breaker for the high life rated 40.5kA, three-phase AC 50Hz indoor high-voltage electrical equipment. Apply to industrial and mining enterprises, substation and transmission and distribution systems for control and protection switching; particularly suitable for metallurgy, electric arc steel-making industries, etc. frequent operation required, as a control and protection equipment.

This product meets the GB1984-89 <AC High Voltage Circuit Breaker> standard. Circuit breaker directly into the GBC-35, JYN1-35 cabinet, remove the plug can be installed separately.

MODELS AND IMPLICATIONS



GENERAL STRUCTURE DRAWING AND INSTALLATION SIZE



MAINLY TECHNICAL PARAMETERS

No.	Name	Units	Value	
1	Rated voltage/lightning impulse withstand voltage (peak)	kV	40,5	
2	Lightning impulse withstand voltage (peak)	kV	185	
3	1min power frequency withstand voltage	kV	95	
4	Rated current	Hz	50	
5	Rated current	A	1250,1600,2000	
6	Rated short-circuit making current	kA	25	31.5
7	Rated short-circuit withstand current	kA	25	31.5
8	Rated peak withstand current	kA	63	80
9	Rated short-circuit continued time	s	4	
10	Rated short-circuit making time	ms	≤ 90	
11	Rated short-circuit ON-OFF current	kA	80	
12	Rated operating sequence		0-0.3s-C0-180s-C0	
13	Closing Time	ms	50 ~ 85	
14	Opening Time	ms	40 ~ 85	
15	Rated current making current breaking times	Times	20	
16	Mechanical life time	Times	10000	
17	Rated capacitor making current	A	630	
18	Energy storage motor rated power	W	275	
19	Energy storage motor rated voltage	V	AC110/220	
20	Storage time	S	≤ 15	
21	Closing and opening solenoid rated voltage	V	≈ 220,110	
22	Loss of pressure tripping device rated voltage	V	≈ 220,100	
23	Over current tripping device rated current	A	5	
24	Auxiliary switch rated voltage current	A	DC10	

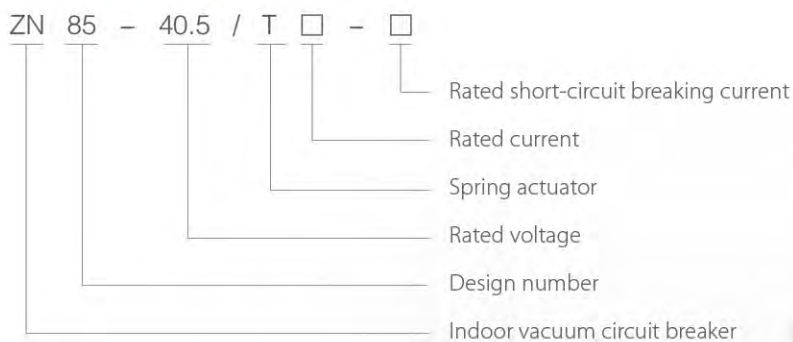
ZN85-40.5 / T □ - □ Series Handcart Type Indoor Vacuum Circuit Breaker

SUMMARY

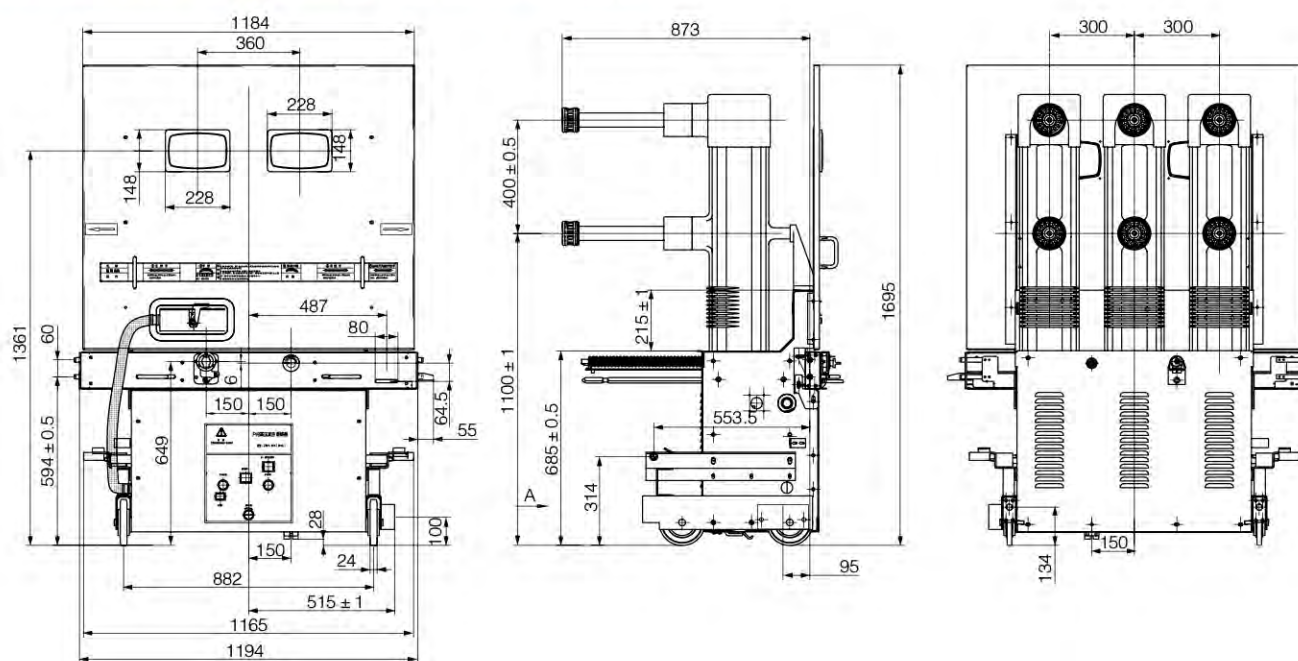
ZN85-40.5 / □ - □ (3AV3)-series handcart type indoor vacuum circuit breaker for three-phase AC 50Hz, 40.5KV power system, for industrial and mining enterprises, power plants and substations as the division and load current, overload current fault current purposes, and occasions for frequent operation.

The circuit breaker arrangement with upper and lower structure, effectively reduce the depth of circuit breakers. And the use of composite structure, three-phase interrupter and associated charged body by the three independent phase separation of epoxy resin insulation casing, using a composite structure, the circuit breaker to meet the air under normal operating conditions from the required distance and climb and effectively reduce the size of circuit breakers, electrical circuit interrupter, a leading and dynamic and static conductive connection installed in the insulating tube, so that the distance only 300mm. All main circuit electrical connection fixed to connect with high reliability.

MODELS AND IMPLICATIONS



GENERAL STRUCTURE DRAWING AND INSTALLATION SIZE



MAINLY TECHNICAL PARAMETERS

No.	Item	Unit	Technical parameters			
1	Rated voltage	kV	40.5			
2	Rated current	A	1250	1600	2000、2500	
3	Rated short-circuit breaking current	kA	25	31.5	25	31.5
4	Dynamic current (peak)	kA	63	80	63	80
5	4S thermal current	kA	25	31.5	25	31.5
6	Rated short circuit making current (peak)	kA	63	80	63	80
7	Rated short-circuit current breaking times	Times	20			
8	Rated operating sequence		0-0.3s-C0-180s-C0			
9	Rated insulation level	1min power frequency withstand voltage Lightning impulse withstand voltage (peak)	kV			
			95 185			
10	Mechanical life	Times	10000			
11	Rated single capacitor device ON-OFF current	A	630			
12	Rated single back-to-back capacitor device current	A	400			
13	Rated voltage electrical energy storage	V	AC、DC: 110; 220			
14	Energy Storage Power Rating	W	≤ 230			
15	Electrical Energy Storage Energy Storage time	S	≤ 15			
16	Hop Tripping coil rated voltage	V	DC: 110; 220			
17	Hop Tripping coil rated current	A	1.05(110V) 0.96(220V)			
18	Contact opening distance	mm	20±2			
19	Contact Contact trip	mm	7.5±1.5			
20	At the different period of three consistency	ms	≤ 2			
21	Contact closing bounce time	ms	≤ 3			
22	Leading electrical circuit resistance(excluding contactor arm)	μΩ	≤ 40			

FN12-12D/T630-20 Series Indoor AC High Voltage Load Switches

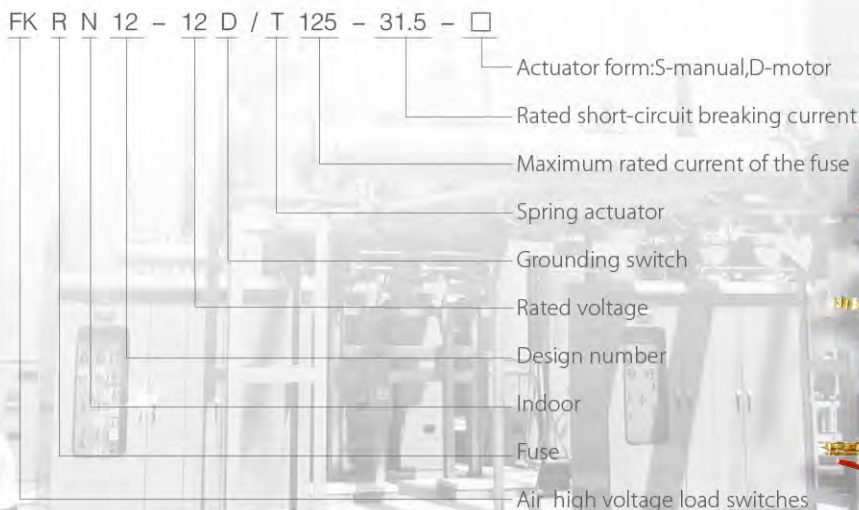
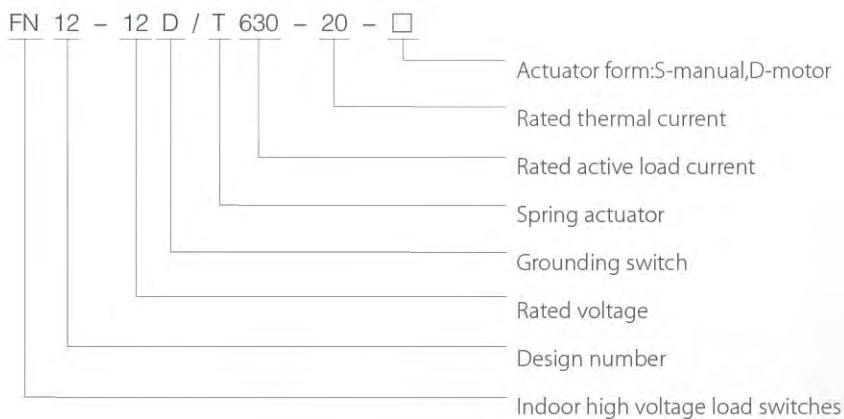
FKRN12-12D/T125-31.5 Series Indoor AC High Voltage Load Switches-Fuse Combination Units

SUMMARY

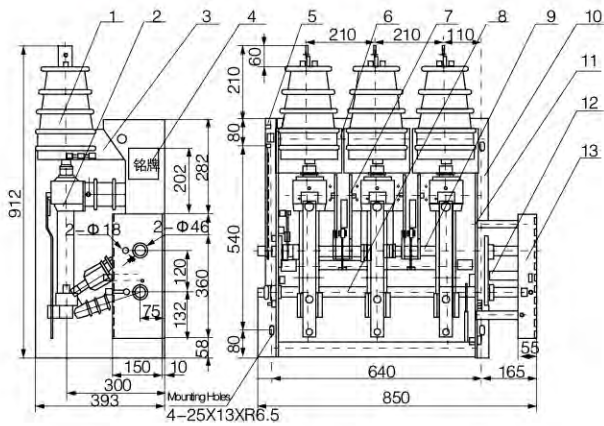
FN12-12D/T630-20 series indoor AC high voltage load switches is a rated voltage of 12kV, rated frequency 50Hz three-phase high-voltage switch equipment ,for the closing and opening load current, loop current, air containing transformers and cable charging current, short circuit current of the Closing. Equipped with grounding switch load switch that can withstand short-circuit current.

FKRN12-12D/T125-31.5 series AC high voltage load switch- fuse combination units, is the FN12-12D load switch and XRNT □ -10 high-voltage current-limiting type fuse combination units together in the indoor high voltage switchgear. It can be a reliable short-circuit breaking current up to any current; load switch breaking current, the fuse short-circuit breaking current breaking joint working between the current and total short-circuit current of any over-current, fuse through its impact to load switches opening.

MODELS AND IMPLICATIONS

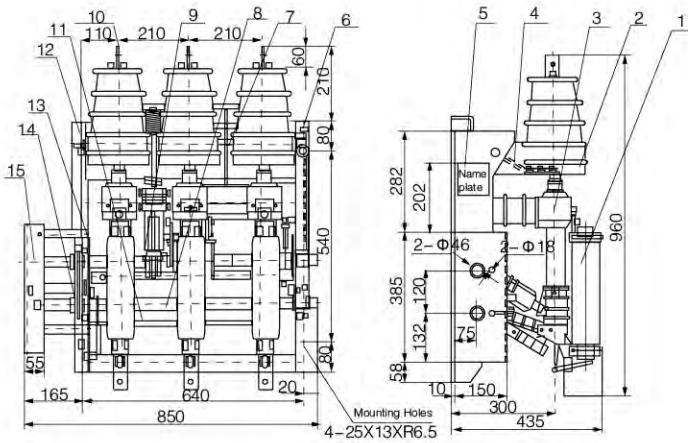


GENERAL STRUCTURE DRAWING AND INSTALLATION SIZE



FN12-12/T630-20 Type indoor AC high voltage load switches

- 1.Static contact parts
- 2.Moving contact parts
- 3.Insulation valves assembling
- 4.Nameplate
- 5.Valve mechanical linkage
- 6.Valve shaft assembling
- 7.Operate mechanism assembling
- 8.Valve control shaft
- 9.Main shaft rotating shaft assembling
- 10.Frame welding
- 11.Back out machine assembling
- 12.Interlock mechanism assembling
- 13.Operate panel assembling



FKRN12-12D/T125-31.5 indoor AC high voltage load switches-Fuse combination units

- 1.Fuse
- 2.Static contact
- 3.Moving contact
- 4.Insulation valves assembling
- 5.Nameplate
- 6.Valve mechanical linkage
- 7.Valve shaft assembling
- 8.Earth shaft assembling
- 9.Operate mechanism assembling
- 10.Main shaft rotation shaft assembling
- 11.Tripping shaft assembling
- 12.Frame welding
- 13.Backout machine assembling
- 14.Interlock mechanism assembling
- 15.Operate panel assembling

MAINLY TECHNICAL PARAMETERS

No.	Item	Units	Value	
			FN12-12D/T630	FKRN12-12D/T125
1	Rated voltage	kV	12	
2	Rated frequency	Hz	50	
3	Rated current	A	630	125
4	Lightning impulse withstand voltage	kV	85Earth&inter-phase 75 insulating fracture 85	
5	1min power frequency withstand voltage	kV	48Earth&inter-phase 42 insulating fracture 48	
6	Rated thermal current	kA	20(4S)	
7	Rated dynamic current	kA	50	
8	Rated closed current (peak)	kA	50	50
9	Rated short-circuit breaking current (predictive value)	kA	-	31.5
10	Max I _{2t} on critical breaking current	A ² S	Comply with fuse characteristic curve	
11	Min breaking current	kA	Comply with fuse characteristic curve	
12	Rated transfer current	kA	-	1.5
13	Max breaking current (reference value)	kA	1.8	
14	Breaking no-load transformer capacity	kVA	1250	
15	Rated cable charged current	A	10	
16	Rated power load current breaking times	次	> 100	
17	Breaking times of striker with load-switch	S	-	> 0.06
18	Earth switch thermal current	kA	20(2S)	
19	Earth switch thermal current (peak)	kA	50	
20	Motor operate power voltage	V	AC DC 110、220	

FZN25-12D/T630-20 Series Indoor High Voltage Vacuum Load-Switches

FZRN25-12D/T125-31.5 Series Indoor High Voltage Vacuum Load-Switches-Fuse Combination Units

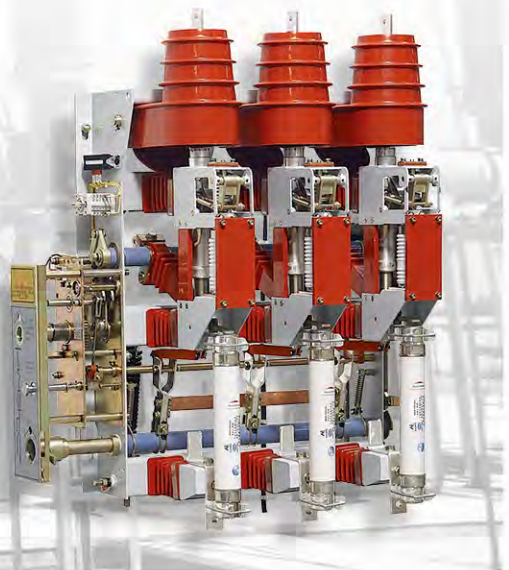
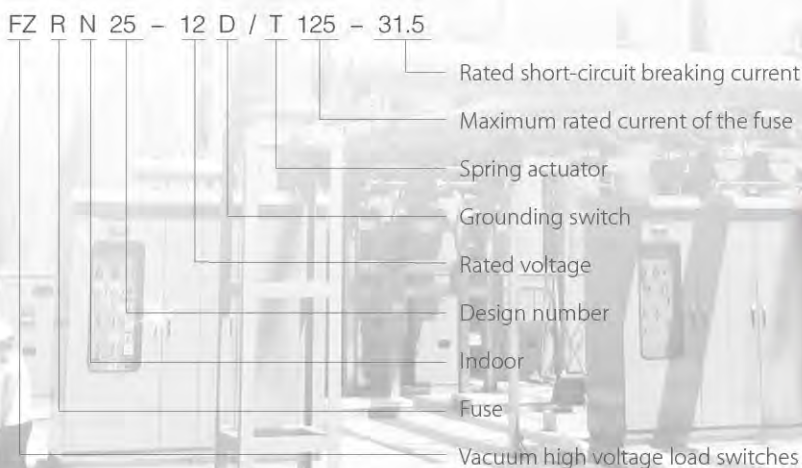
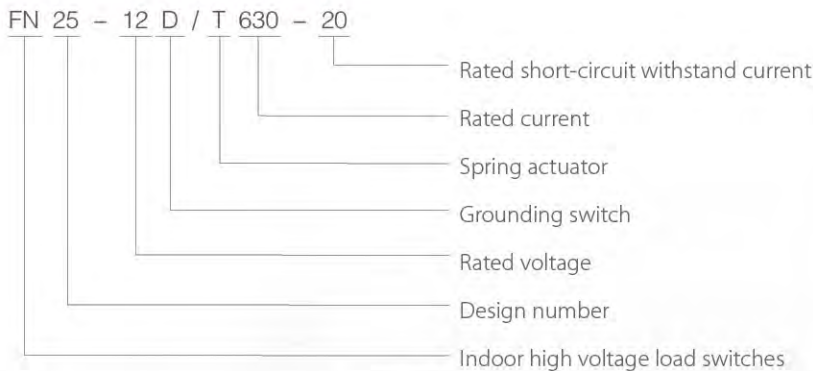
SUMMARY

FZN25-12D/T630-20 series indoor high voltage vacuum load-switches is three-phase AC 50Hz, rated voltage of 12kV and indoor installations, for industrial and mining enterprises for distribution in clinics and substations and other occasions, as electrical protection and control facilities for the division and load current, loop current, no load transformer and cable charging current.

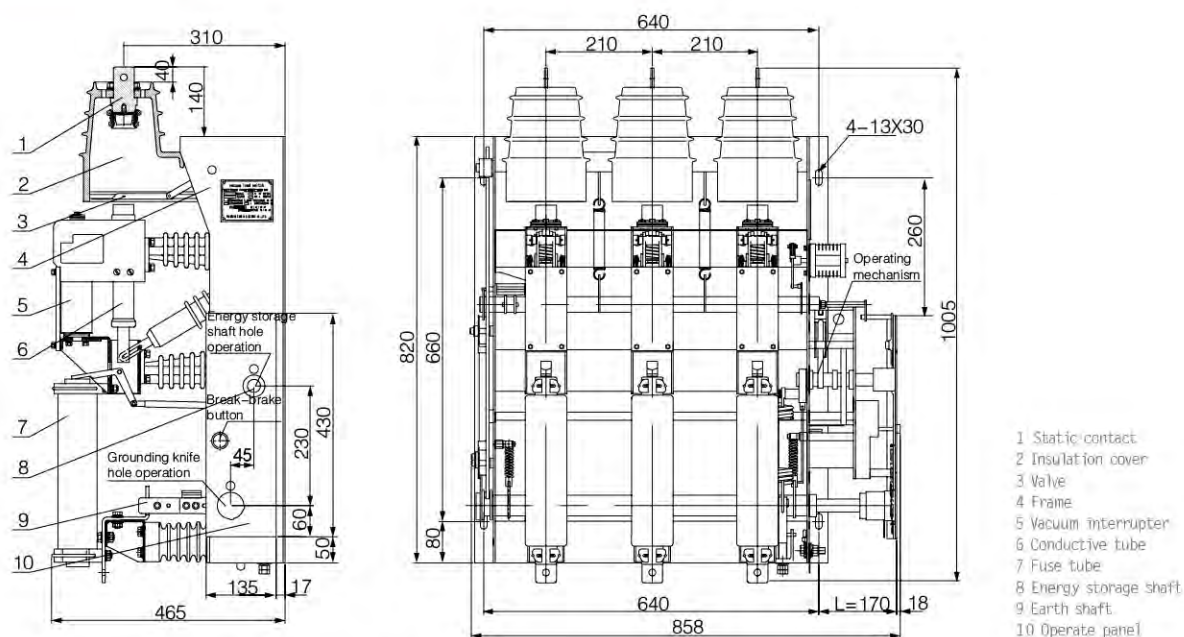
FZRN25-12D/T125-31.5 series indoor high voltage vacuum load-switches- fuse combination units is three-phase AC 50Hz, rated voltage of 12kV for indoor installations for industrial and mining enterprises and other occasions to change the station distribution Institution for load control and short circuit protection purposes. Equipped with grounding switch can withstand short-circuit current. Actuator can be manual and electric, easy remote control three power system requirements.

FZN25-12D, FZRN25-12D series load switch and the combination of electric three-phase are for city distribution and industrial power equipment of three phase ring network or terminal power supply ,for load control and short circuit protection. As the combination of electrical transformers and other electrical equipment on the protective effect than the circuit more reliable, more economical, especially for rings, double radiation power supply units and box-type substation.

MODELS AND IMPLICATIONS



GENERAL STRUCTURE DRAWING AND INSTALLATION SIZE



Right operate FZRN25 vacuum load switch and switchgear assembly

MAINLY TECHNICAL PARAMETERS

No.	Item	Unit	Value	
			FZRN25-12D/T630-20	FZRN25-12D/T125-31.5
1	Rated voltage	kV	12	
2	Rated frequency	Hz	50	
3	Rated current	A	630	125
4	Rated insulation level	1min power frequency withstand voltage (effective value)	Arc-quenching chamber fracture 30	
		Lightning impulse withstand voltage (peak)	Earth ,phase 42, insulating fracture 48	
			Earth ,phase 75, insulating fracture 85	
5	Rated dynamic current (peak)	kA	50	-
6	4S thermal current	kA	20	-
7	Rated power load breaking current	A	630	125
8	Rated closed-loop breaking current	A	630	125
9	Rated cable charge breaking current	A	10	10
10	Rated breaking no-load transformer capacity	kVA	1250	
11	Rated transfer current	A	-	2000
12	Fuse model		-	SDLAJ-12
13	Striker output energy	J	-	2 ~ 5
14	Rated short-circuit closed current	kA	50	80(peak)
15	Earth switch rated dynamic current	kA	50	
16	Earth switch 2s thermal current	kA	20	
17	Auxiliary circuit rated voltage	V	~ 220 ~ 110	
18	Mechanical life	Times	10000	
19	Opening time of fuse trigger	ms	-	30 ~ 40
20	Opening time of tripper trigger	ms	40 ~ 50	

FZN21-12/T630-20 Series Indoor AC High Voltage Load Switches

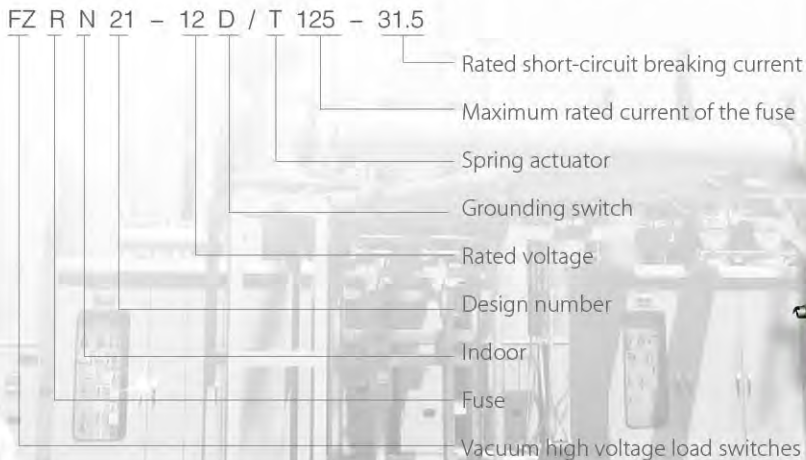
FZRN21-12D/T125-31.5 Series Indoor AC High Voltage Load Switches-Fuse Combination Units

SUMMARY

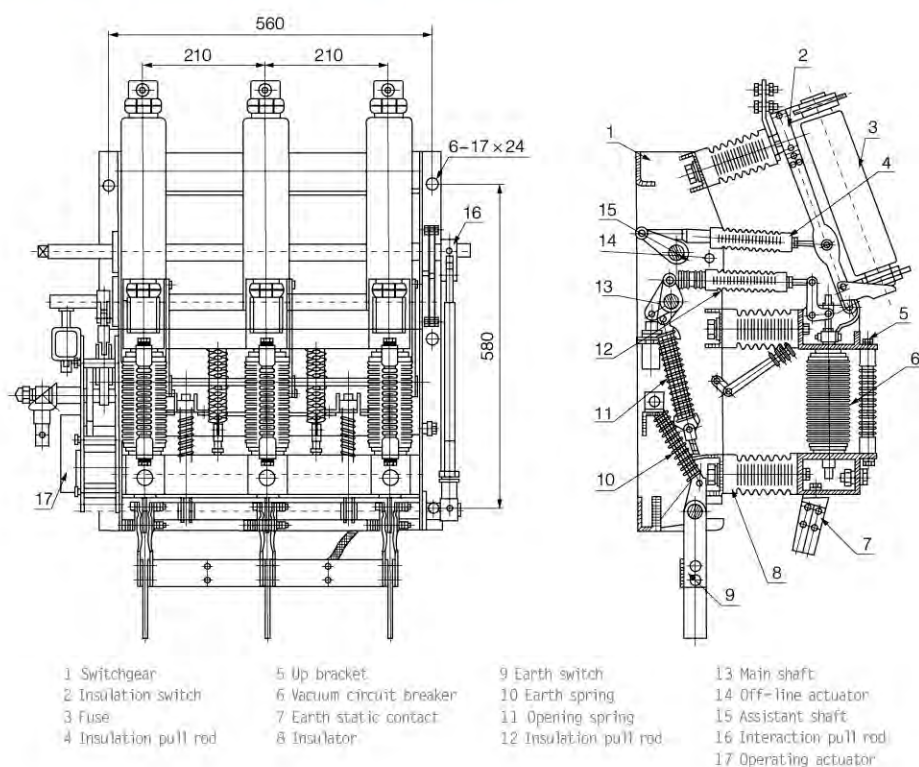
FZN21-12/T630-20 and FZRN21-12D/T125-31.5 series Indoor AC high voltage load switch- fuse combination units appliances for three-phase AC 12kV, 50Hz power system, or with the complete power distribution equipment and loop-network switch cabinet , combined substation and other ancillary uses, is widely used in urban network construction and transformation engineering, industrial and mining enterprises, high-rise buildings and public facilities ,can be used as ring power supply unit or terminal equipment, play power distribution, control and protection. Technical performance of the products meet the IEC publication 60265-1/FDIS <high voltage switches, Part 1: Rated voltages below 1kV over 52kV high voltage load switch>, IEC60420<High Voltage AC load switch fuse combination units>; and CB16926<AC High-voltage load switch - fuse combination units>, GB3804<3-63kV AC high voltage switches>requirement.

This product has a breaking capacity, safety and reliability, long life, can operate frequent, compact structure, small size, light weight, the basic no need to maintain. Breaking with rated current, overload current (FZRN21-12D/T125-31.5 can short-circuit breaking current) and to prevent equipment missing running ability to switch a visible fracture of isolation, with combined installed capacity of the ground with the relevant switches and electrical spring agencies, to remote control.

MODELS AND IMPLICATIONS



GENERAL STRUCTURE DRAWING AND INSTALLATION SIZE



MAINLY TECHNICAL PARAMETERS

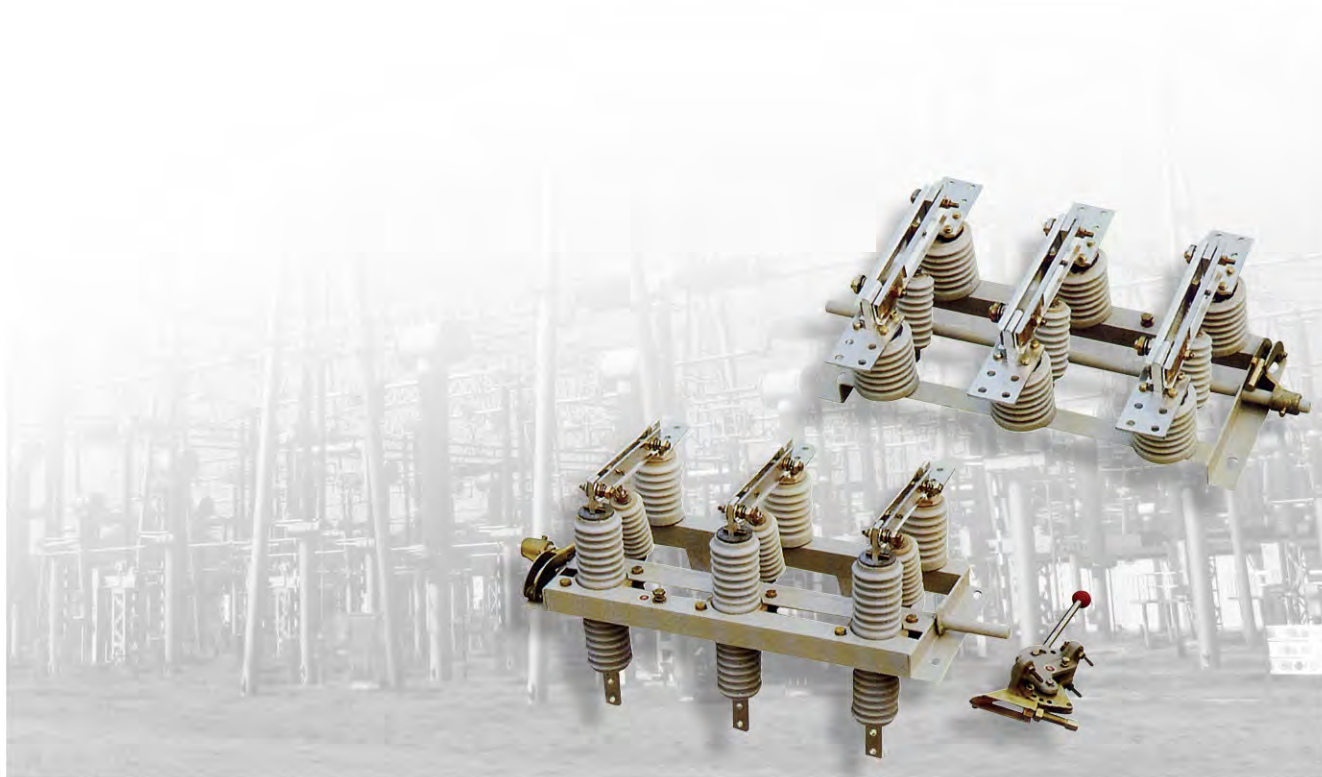
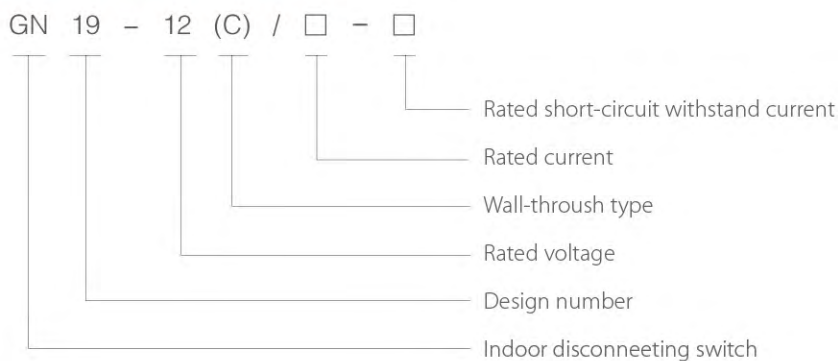
No.	Item	Unit	Value	
			FZRN21-12D/T630-20	FZRN21-12D/T125-31.5
1	Rated voltage	kV	12	
2	Rated frequency	Hz	50	
3	Rated current	A	630	125
4	Rated insulation level	1min power frequency withstand voltage (Effective value)	Arc-quenching chamber fracture 48	
			Earth , phase 42, insulating fracture 48	
			Earth , phase 75, insulating fracture 85	
5	Rated dynamic current (peak)	kA	50	—
6	4S thermal current	kA	20	—
7	Rated power load breaking current	A	630	125
8	Rated closed-loop breaking current	A	630	125
9	Rated cable charge breaking current	A	10	10
10	Rated breaking no-load transformer capacity	kVA	1250	
11	Rated breaking AC current	A	3150	
12	Rated short-circuit closed current	kA	50	
13	Rated current breaking times	Times	2000	
14	Mechanical life	Times	10000	
15	Permitted wear-thickness of vacuum arc-quenching chamber contact	mm	2	
16	Manual operating torque	Nm	>200	

GN19-12(C) Series Indoor High Voltage Disconnecting Switches

SUMMARY

GN19-12(C) series indoor high voltage disconnecting switch is suitable for power system of rated voltage 12KV,AC50Hz or under,it is equipped with CS6-I manual operation mechanism for circuit switching on or off in the condition with voltage but without load,and breaker with electric charged indication device.

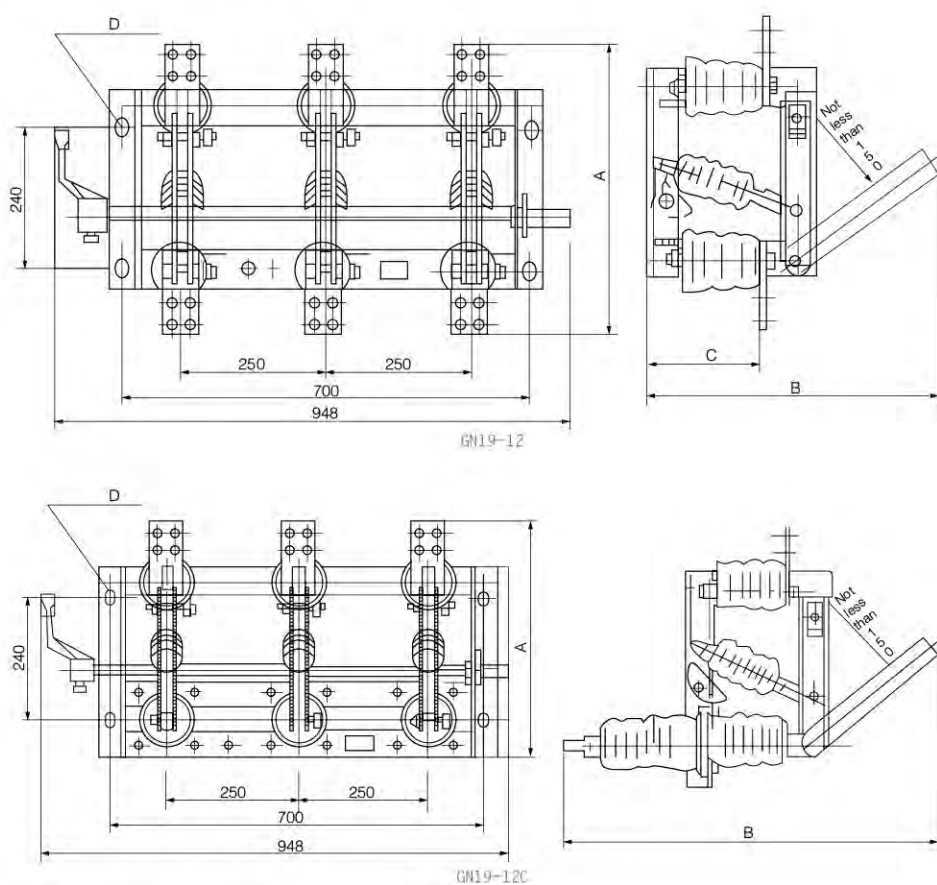
MODELS AND IMPLICATIONS



MAIN TECHNICAL PARAMETER

Type	Rated voltage(kV)	Rated current(A)	Rated short time withstand current	Rated peak withstand current
GN19-12/400-12.5	12	400	12.5	31.5
GN19-12/630-20	12	630	20	50
GN19-12/1000-31.5	12	1000	31.5	80
GN19-12/1250-31.5	12	1250	31.5	80
GN19-12C/400-12.5	12	400	12.5	31.5
GN19-12C/630-20	12	630	20	50
GN19-12C/1000-31.5	12	1000	31.5	80
GN19-12C/1250-31.5	12	1250	31.5	80

OUTLINE AND MOUNTING DIMENSION



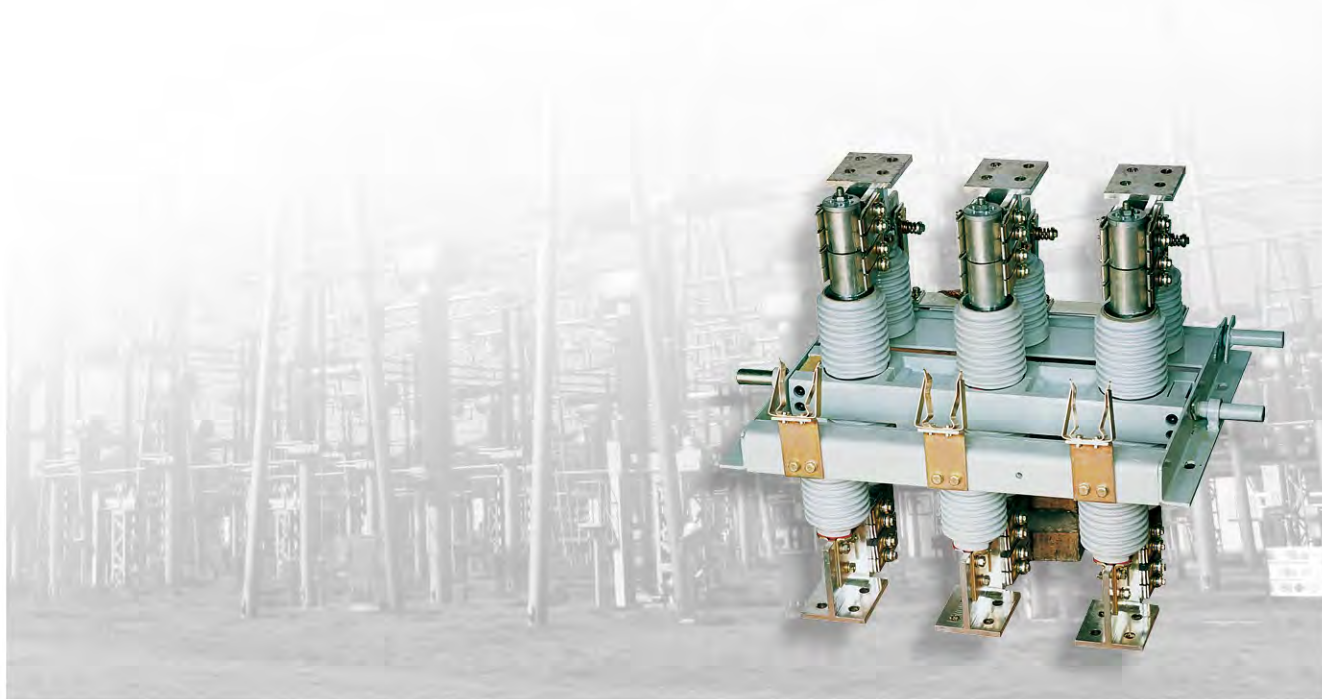
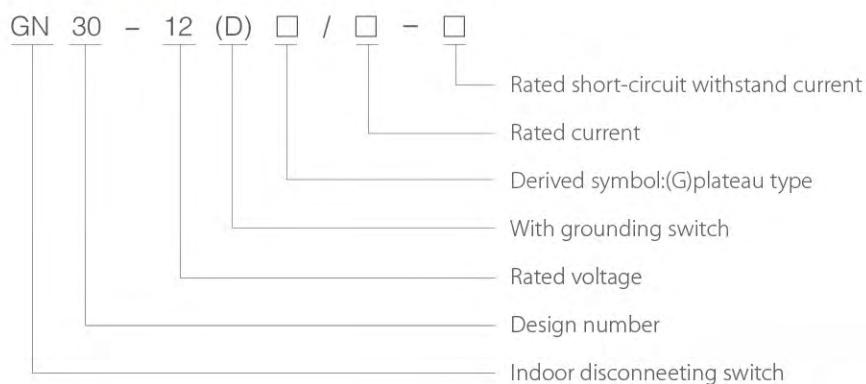
Type	A	B	C	D
GN19-12/400	450	446	185	4-14×24
GN19-12/630	470	446	185	4-14×24
GN19-12/1000/1250	510	500	196	4-18×28
GN19-12C/400	420	690	185	4-14×24
GN19-12C/630	430	690	185	4-14×24
GN19-12C/1000/1250	470	745	196	4-18×28

GN30-12 Series Indoor High Voltage Rotation Disconnecting Switches

SUMMARY

GN30-12 series indoor high voltage rotation disconnecting switches is a new type disconnecting switches , which special designed for XGN2-12 high voltage switchgear , with rated voltage 12kV and three phase AC 50Hz indoor facility. It mainly open-closed circuit on condition with voltage and no load , make circuit breaker and main bus reliable and effective with disconnecting and earth, to guarantee safe for maintenance staff and component , avoid accident .

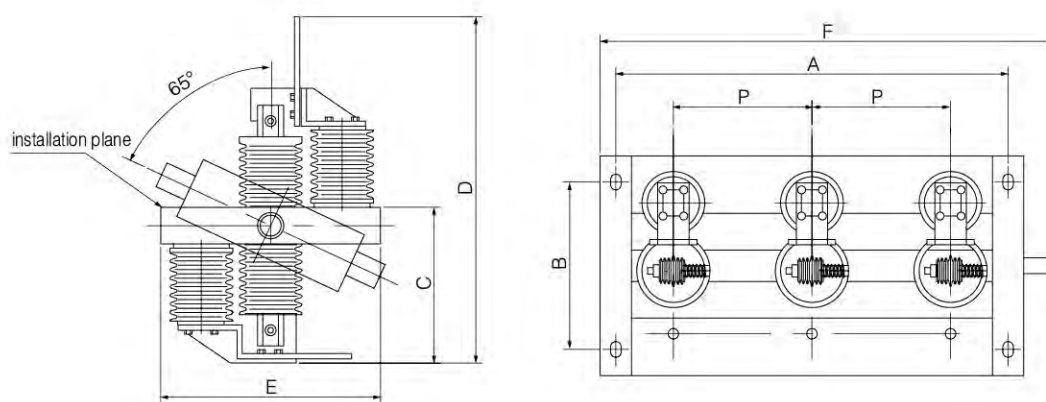
MODELS AND IMPLICATIONS



THE USE OF ENVIRONMENTAL CONDITIONS

- Ambient temperature: not higher than +40°C , not less than -15°C (at -30°C to allow storage and transportation).
- Altitude: not exceed 1000m.
- Relative humidity: daily average of not more than 95%, month average of not more than 90%.saturated vapor pressure daily average of not more than 2.2 kPa, month average not more than 1.8 kPa.
- Earthquake intensity: not more than eight.
- No fire, explosion hazard, serious filthy, chemical corrosion, as well as places of intense vibration.

GENERAL STRUCTURE DRAWING



Rated current	P	A	B	C	D	E	F
630、1000	275	760	300	282Parallel inlet 363Vertical outgoing line	510 double parallel 575 one parallel vertical 655 double vertical	400	870
	250	760	300	270Parallel inlet 363Vertical outgoing line	510 double parallel 575 one parallel vertical 655 double vertical	400	900
	230/210	680	300	282Parallel inlet 363Vertical outgoing line	510 double parallel 575 one parallel vertical 655 double vertical	410	810

MAINLY TECHNICAL PARAMETERS

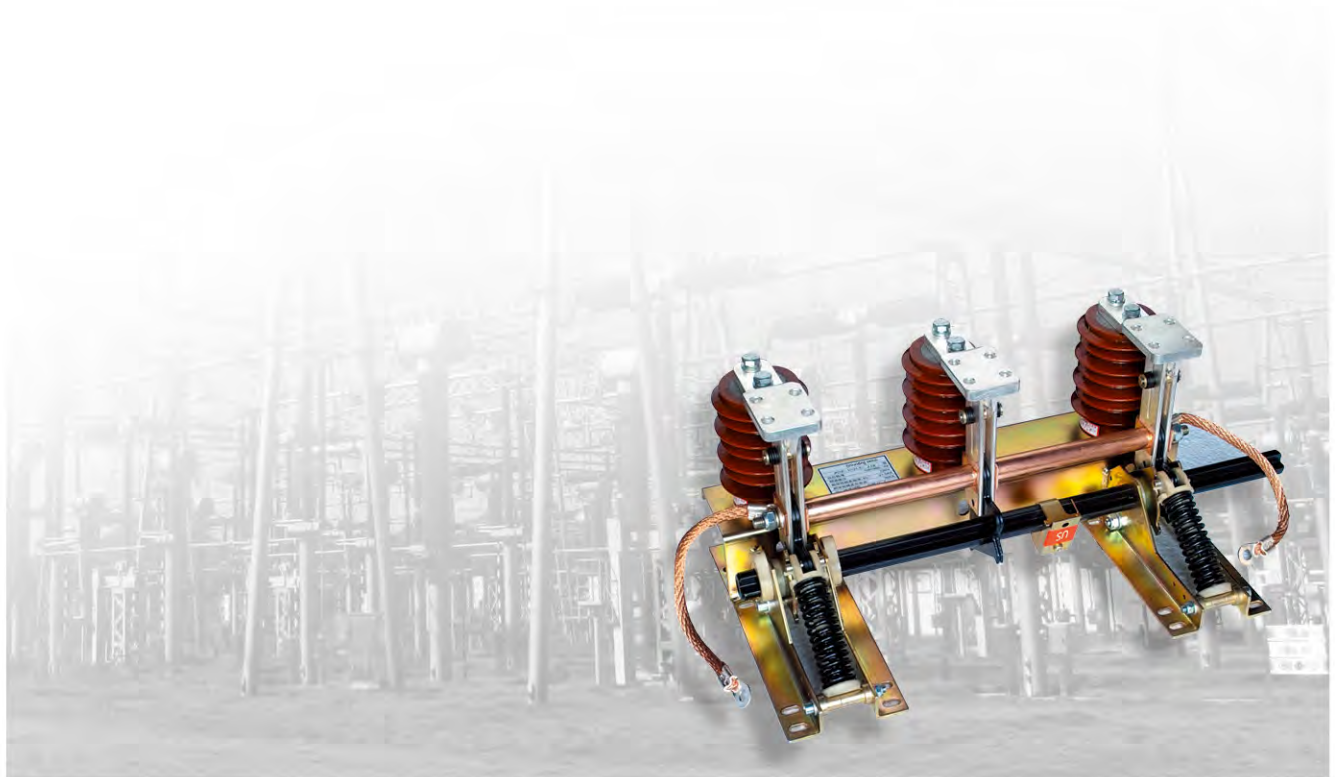
Item	Units	Data	
Rated voltage	kV	12	
Rated current	A	400/630/1000/1250	
4s thermal stability current	kA	12.5/20/31.5	
Dynamic stability current	kA	31.5/50/80	
Inter phase center	mm	210/230/250	
Rated Isolation lever	kV	1min working tolerance frequency voltage	42
		Lightning Impulse voltage tolerance	75

JN15-12/31.5 Series Indoor High Voltage Earth Switch

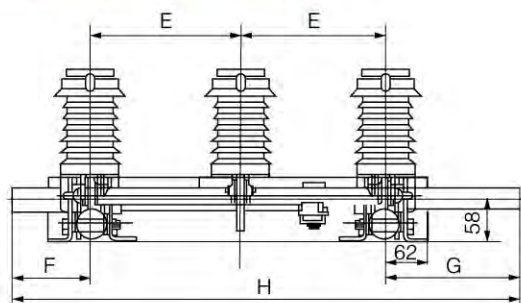
SUMMARY

JN15-12/31.5 series indoor high voltage earth switch is advance product for collective high technology on the world . Through comprehensive examine, the feature comply with GB1985-89<AC high voltage disconnecting switches and earth switches>and IEC129 standard , suitable for power system with 12kV and blow AC 50Hz, support with kinds of High voltage switchgear and as earth protection.

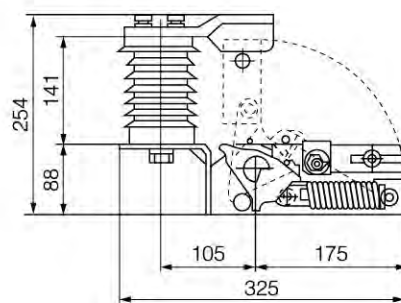
MODELS AND IMPLICATIONS



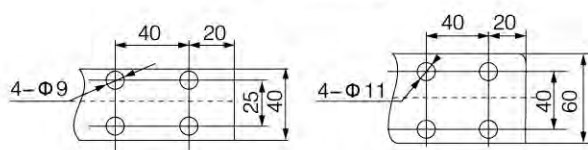
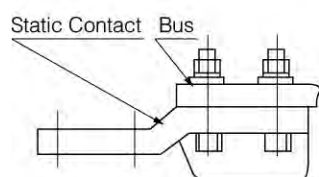
GENERAL STRUCTURE DRAWING



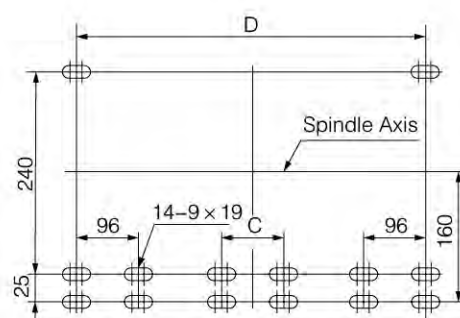
Metal plate wiring terminal drawing



Install opening drawing



Note: Only use for below 180mm inter phase distance .



Note: Use for above 180mm inter phase instance.

Type	E	F	G	H	D	C
JN15-12/31.5-165	165	75	160	565	426	—
JN15-12/31.5-180	180	75	160	595	456	—
JN15-12/31.5-200	200	75	160	635	495	96
JN15-12/31.5-210	210	75	160	655	516	96
JN15-12/31.5-220	220	75	160	675	536	96
JN15-12/31.5-230	230	75	160	695	556	96
JN15-12/31.5-250	250	75	160	735	596	96
JN15-12/31.5-275	275	75	185	810	646	96

MAINLY TECHNICAL PARAMETERS

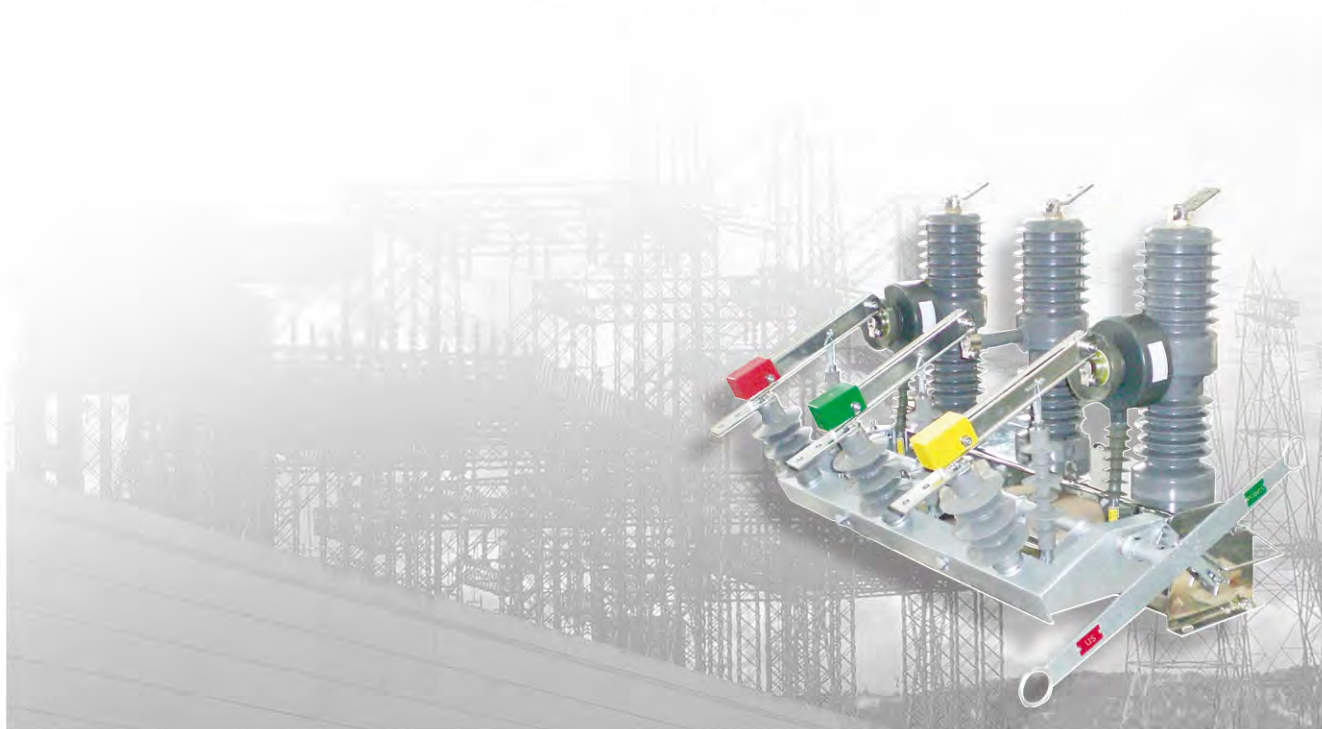
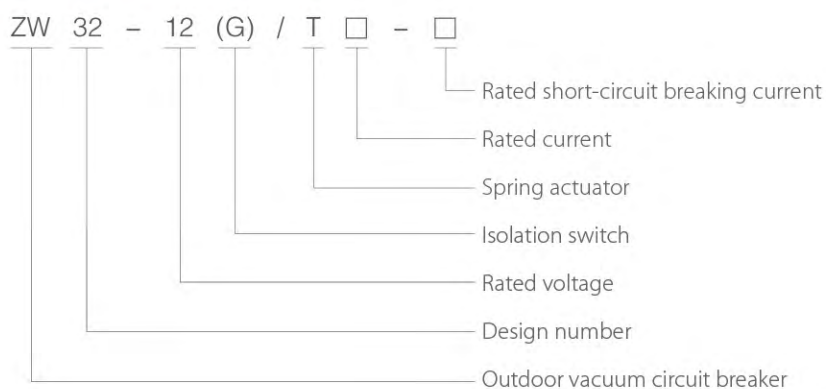
Item	Units	Data	
Rated voltage	kV	12	
Rated short time tolerance current	kA	31.5	
Rated short circuit duration time	s	4	
Rated short circuit closing current	kA	80	
Rated peak value tolerance current	kA	80	
Rated isolation level	kV	1min working voltage tolerance	42
		Lightning Impulse voltage tolerance	75

ZW32-12(G) Series Outdoor High Voltage Vacuum Circuit Breaker

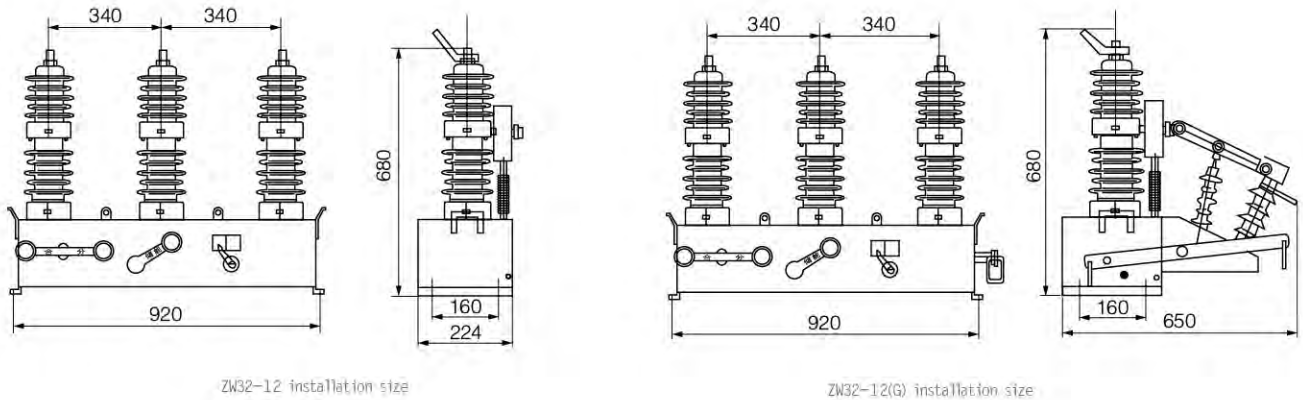
SUMMARY

ZW32-12 (G)-series outdoor high voltage vacuum circuit breaker for AC 50HZ, voltage 10 ~ 12kV three-phase power system, as breaking, Closing load current use, it has overload and short circuit protection function, to meet the control and measurement requirements, also allows remote control and monitoring. For protect and control the distribution systems of substation and industrial and mining enterprises and for the frequent use places of the rural power grid.

MODELS AND IMPLICATIONS



GENERAL STRUCTURE DRAWING AND INSTALLATION SIZE



ZW32-12 installation size

ZW32-12(G) installation size

MAINLY TECHNICAL PARAMETERS

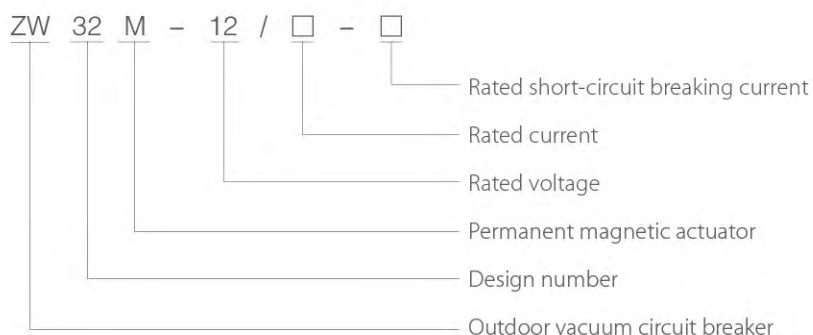
No.	Item		Units	Value
1	Rated voltage			12
2	Rated insulation level	1min power frequency withstand voltage	kV	Dry 42
		Lightning impulse withstand voltage (peak)		Wet 34
3	Rated current		A	630; 400; 200
4	Rated short-circuit breaking current		kA	20; 16; 12.5
5	Rated operating sequence			0-0.3s-C0-180s-C0
6	Rated short-circuit breaking current breaking times		Times	30
7	Rated short-circuit closed current (peak)		kA	50
8	Rated peak withstand current			
9	Rated short-time withstand current			20
10	Rated short-circuit duration		s	4
11	Opening time (magnetic releasing)	Max operating voltage	ms	23 ~ 45
		Rated operating voltage		
		Min operating voltage		
12	Closing time			25 ~ 45
13	Total break time		ms	≤ 100
14	Arcing time			
15	Mechanism life		Times	10000
16	Storage energy motor rated input power		W	75
17	Rated operating voltage and auxiliary circuit rated voltage		V	DC220、110、24
				AC220、110、24
18	Storage energy time on rated voltage		s	≤ 10
19	Over-current tripper	Rated current	A	5
		Tripping current precision	%	± 10

ZW32M-12 Series Outdoor Permanent Magnet-Type Vacuum Circuit Breaker

SUMMARY

ZW32M-12 series outdoor permanent magnet-type vacuum circuit breaker is composite by ZW32-12 series outdoor circuit breakers and CH-1 series line protection controller, after to increase the PT power composed outdoor intelligent switch system and recloser . The intelligent system can achieve three reclosing, overload protection, three-stage over-current protection, automatic fault isolation section, improve system reliability in order to achieve distribution network automation.

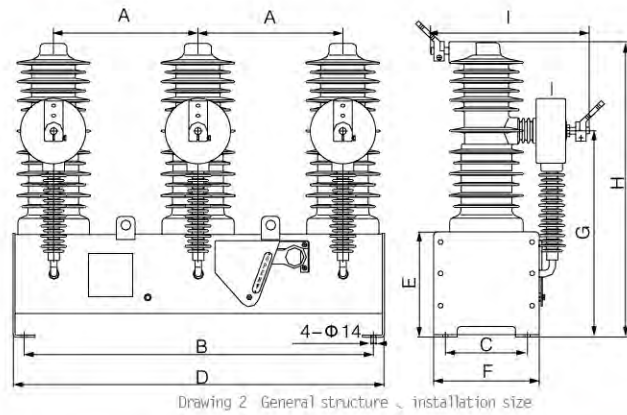
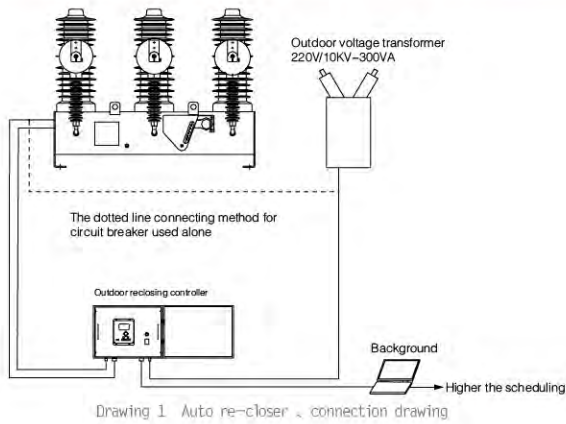
MODELS AND IMPLICATIONS



THE USE OF ENVIRONMENTAL CONDITIONS

- Altitude: ≤1000m.
- Air temperature: -40℃ ~ +50℃
- Relative humidity: ≤95%
- Maximum wind speed:35m/s
- No fire, explosion hazard, serious filthy, chemical corrosion, as well as places of intense vibration.

GENERAL STRUCTURE DRAWING AND INSTALLATION SIZE



Voltage	Size	Installation dimensions			General structure size					
		A	B	C	D	E	F	G	H	I
12kV		340	920	160	904	220	240	470	720	335
24kV		394	1030	160	1012	220	240	500	747	432

MAINLY TECHNICAL PARAMETERS

No.	Item	Units	Parameters	
			12kV	24kV
1	Rated frequency	Hz	50	
2	Rated voltage	kV	12kV	24kV
3	1min power frequency withstand voltage dry wet	Dry	42	65
		Wet	34	50
4	Rated lightning impulse withstand voltage	kV	75	125
5	Rated current	A	630	630
6	Loop resistance with limited on rated contact pressure	μΩ	≤ 80	≤ 80
7	Rated short-circuit breaking current	kA	20	20
8	Rated short-time withstand current	kA	20	20
9	Rated short-circuit duration	S	4	4
10	Rated peak withstand current	kA	50	50
11	Rated short-circuit closed current	kA	50	50
12	Rated operating sequence		0-0.3s-C0-1.80s-C0	

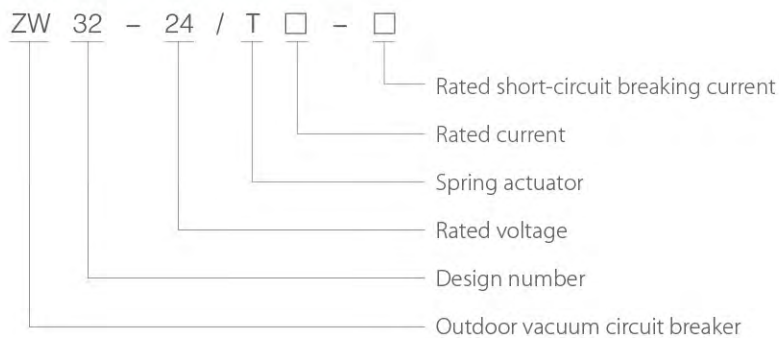
ZW32-24 Series Outdoor High Voltage Vacuum Circuit Breaker

SUMMARY

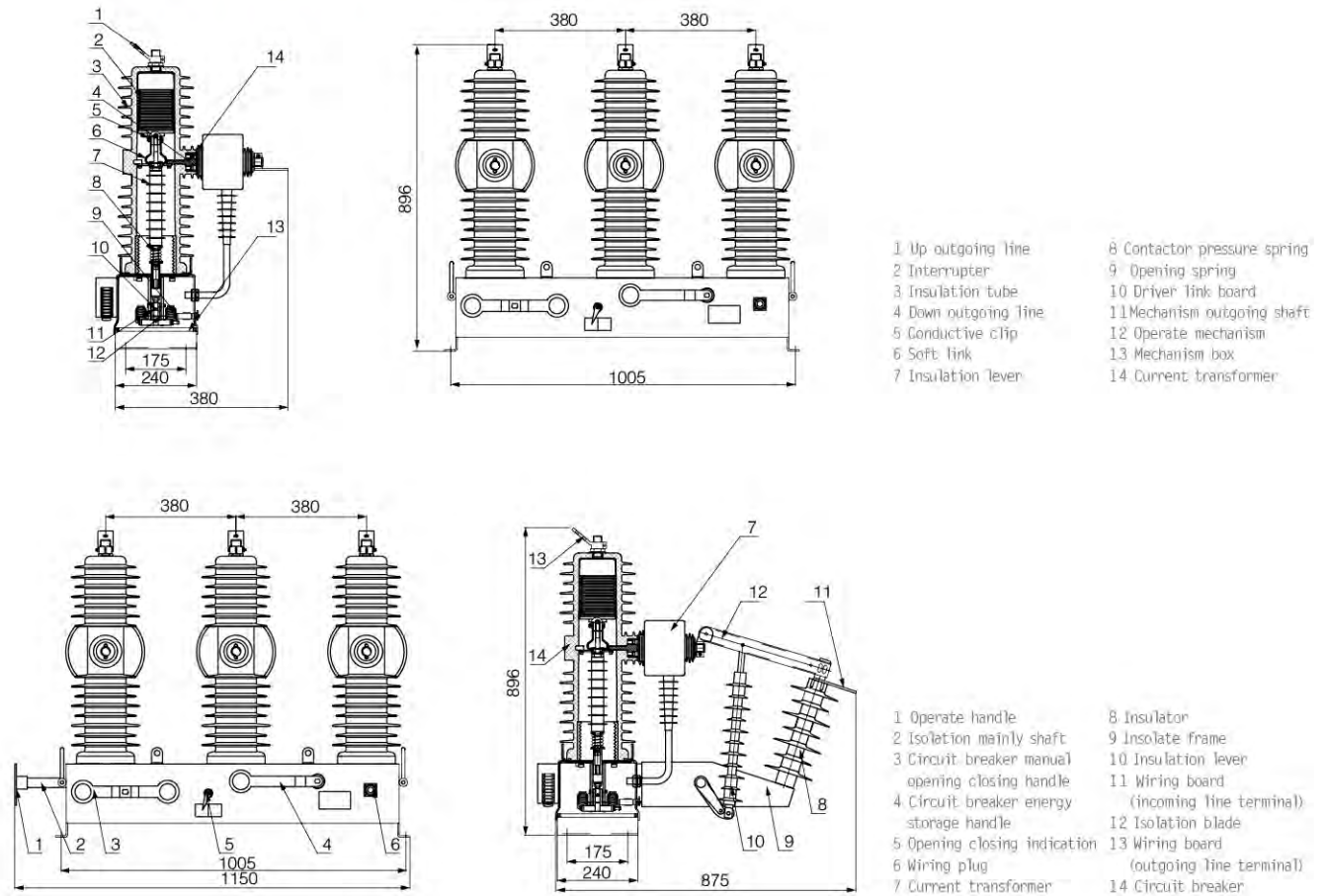
ZW32-24 series outdoor high voltage vacuum circuit breaker is rated voltage 24kv, three phase AC 50Hz outdoor distribution equipment. mainly used to breaking closing power system load current ,overload current and short-circuit current. Applicable to substations and power distribution in industrial and mining enterprises for protection and control purposes, and frequent operation place for rural power .

The circuit breaker Small size, light weight, anti-condensation, maintenance and so on. Adapt to adverse weather conditions, and to teach filthy environment.

MODELS AND IMPLICATIONS



GENERAL STRUCTURE DRAWING AND INSTALLATION SIZE



MAINLY TECHNICAL PARAMETERS

No.	Item	Units	Parameters
1	Rated voltage	kV	24
2	Rated frequency	Hz	50
3	Rated current	A	630
4	Rated short-circuit breaking current	kA	20
5	Rated peak value withstand current(peak)	kA	50
6	Rated short time withstand current	kA	20
7	Rated short-circuit closing current (peak)	kA	50
8	Mechanical life	Times	10000
9	Rated short-circuit breaking current breaking number	Times	30
10	Power frequency withstand voltages(wet) (dry) inter-phase ,earth, fracture.	kV	65/79
11	Lightning impulse withstand voltage (peak) inter-phase ,earth, fracture.	kV	125/145
12	Secondary circuit 1min power frequency voltages	kV	2

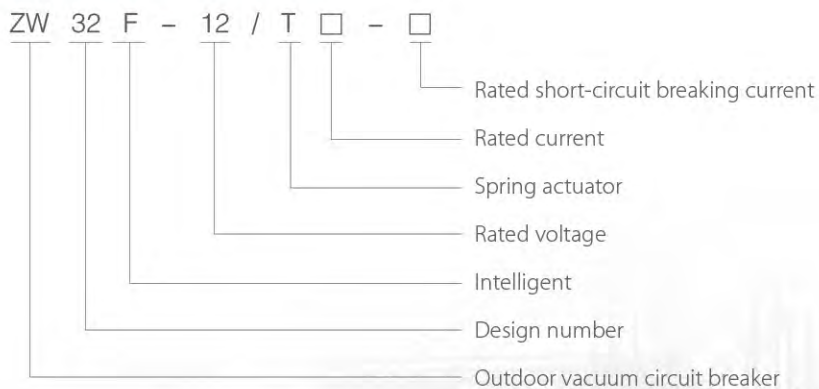
ZW32F-12 Series Outdoor Intelligent High Voltage Vacuum Circuit Breaker

SUMMARY

ZW32F-12 series intelligent outdoor high voltage vacuum circuit breaker is one kind of outdoor high volt distributing equipment of three-phase AC 50Hz and 12kv,to be used to switch on and off load current,overload current and short current inside power system,this product is especially suitable for certain place with frequently operation,the circuit breaker could be divided into two kinds according to operating mechanism such as ZW32-12/T (spring operating mechanism)and ZW32M-12 model(permanent magnetism operating mechanism).

ZW32F-12G model circuit breaker adopts CTB spring store-energy mechanism,with many advantages of compact mechanism, reliable performance,fast on-off speed,sealed box structure,without any dew or corrosion inside body,so,its reliability of switch is heightened to great degree.Breaker combining controller could form recloser,for realizing remote control,remote test,remote signaling and remote regulation etc.

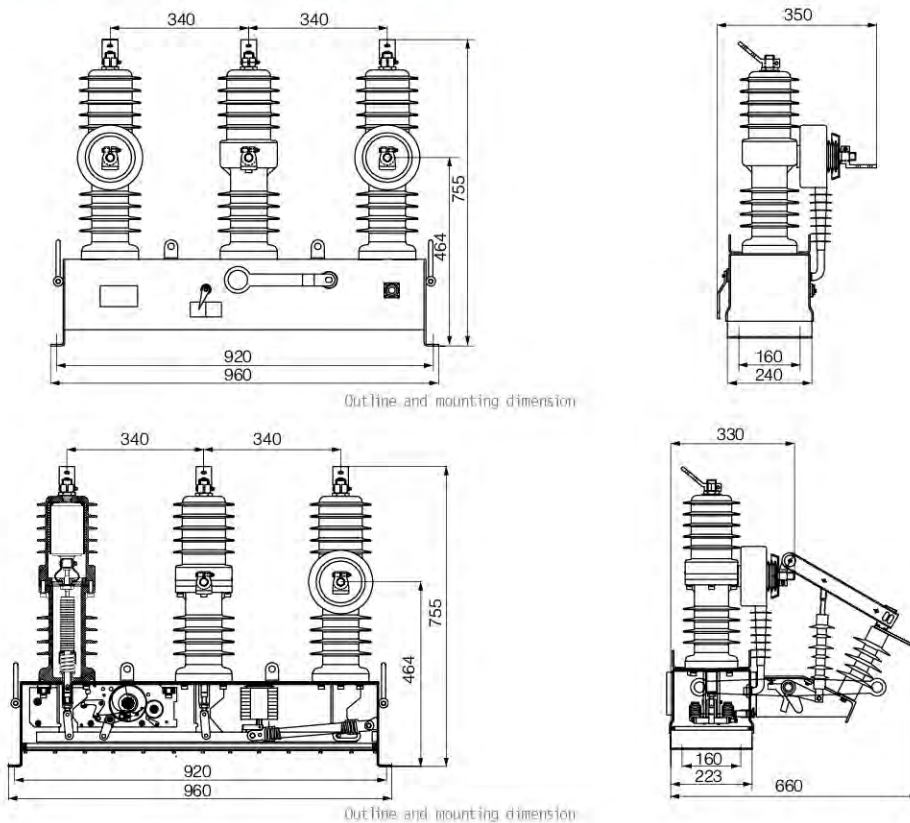
MODELS AND IMPLICATIONS



MAINLY TECHNICAL PARAMETERS

Item		Unit	Parameters
Rated voltage		KV	12
Rated insulation level	1 min Power frequency withstand voltage	KV	Phase space,Groundling42;Fracture48
	Lighting impulse withstand voltage(Peak value)		External insulation 34 on the ground
Rated frequency		Hz	50
Rated current		A	630
Rated short-circuit breaking current		KA	12.5/16/20
Rated short-circuit closed current		KA	50
Rated peak withstand current		KA	50
4S short-time withstand current		KA	50
Rated operate sequence			0-0.3s-C0-180s-0
Opening time/Closing time		ms	25~50/15~50
Rated short-circuit breaking current breaking times		times	30
Machine life		times	10000
1min power frequency withstand voltage of control circuit and auxiliary circuit		V	2000
Rate working voltage and auxiliary circuit rated volatge		V	DC220/AC220
Over-current tripper	Rated current	A	5
	Tripping current veracity	%	±10

GENERAL STRUCTURE DRAWING AND INSTALLATION SIZE



ZW8-12(G) Series Outdoor High Voltage Vacuum Circuit Breaker

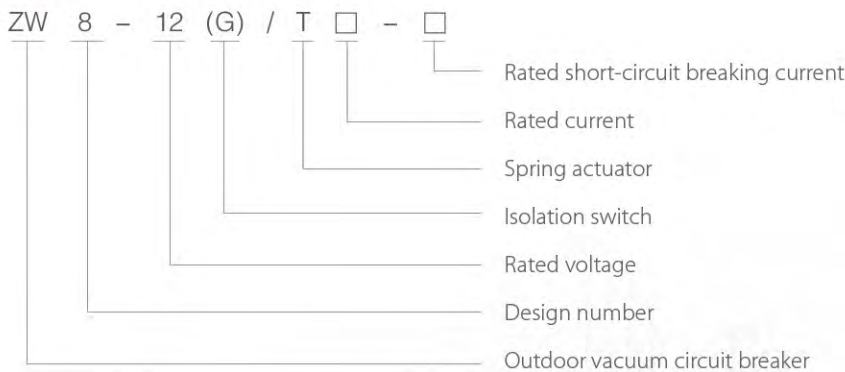
SUMMARY

ZW8-12(G) series outdoor high voltage vacuum circuit breaker is rated voltage 12KV, three-phase AC 50Hz outdoor high voltage switchgear is mainly used to breaking Closing Rural power network , city network and small power system load current, overload current, short-circuit current . The product of the overall structure is box-type three-phase, three-phase vacuum interrupter placed in metal boxes, using SMC insulation material and inter-phase insulation and ground insulation, reliable performance, high dielectric strength.

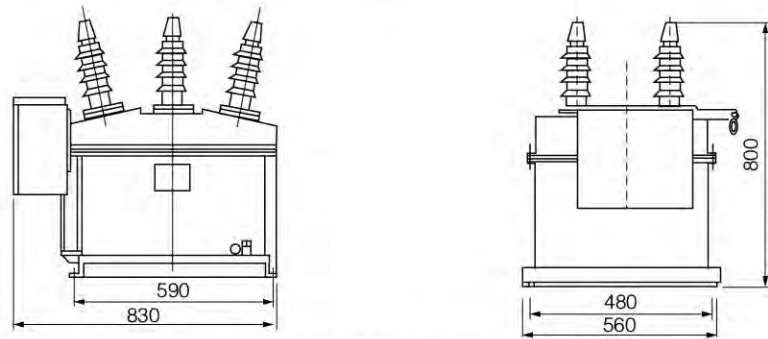
ZW8-12(G) is ZW8-12 a composite by circuit breaker and isolating switch, called the combination of circuit breakers, use for disconnect switches

This series of operating mechanism for the CT23 type spring operating mechanism energy storage can be divided into two kinds of electric and manual.

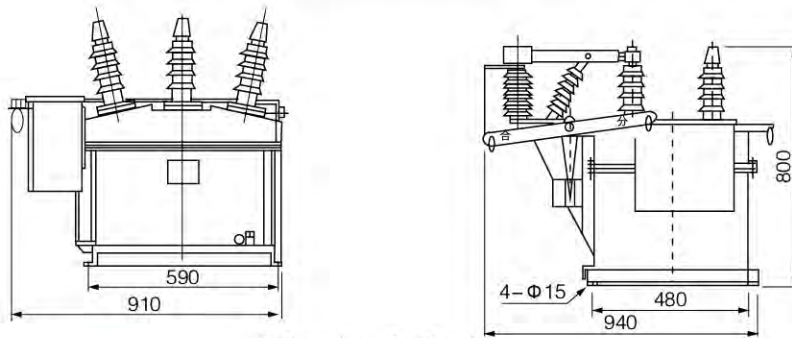
MODELS AND IMPLICATIONS



GENERAL STRUCTURE DRAWING AND INSTALLATION SIZE



Outline and mounting dimension



Outline and mounting dimension

MAINLY TECHNICAL PARAMETERS

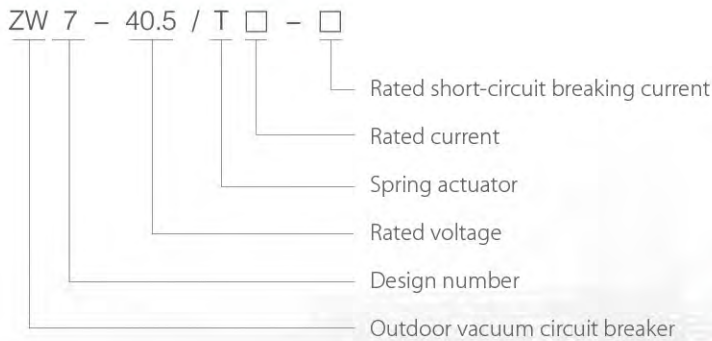
No.	Item	Units	Value
1	Rated voltage	kV	12
2	Rated current	A	630(1250)
3	Rated short-circuit breaking current	kA	20
4	Rated short circuit closed current (peak)	kA	50
5	Rated peak withstand current	kA	50
6	Rated short-circuit withstand current	kA	20
7	Rated insulation level		
	power frequency withstand voltages (dry)		42
	Lightning impulse withstand voltage (peak)		75
8	Rated operating sequence		0-0.3s-C0-180s-C0
9	Mechanical life	Times	10000
10	Rated short-circuit breaking current breaking times	Times	20
11	Rated closing voltage of operation mechanism	V	AC110、AC220
12	Rated opening voltage of operation mechanism	V	AC110、AC220
13	Contact distance	mm	11 ± 1
14	Over stroke (compression length of contact spring)	mm	
15	Three phase closing and opening non-synchronism	ms	≤ 2
16	Contact closing bounce duration	ms	≤ 2
17	Average opening speed	m/s	1.0 ± 0.2
18	Average closing speed	m/s	0.7 ± 0.15
19	Opening time	m/s	15-50
20	Closing time	m/s	25-50
21	Resistance of main loop for each phase	μΩ	≤ 120
22	Permitted accumulate wear-thickness of dynamic and static contact	mm	≤ 3

ZW7-40.5 Series Outdoor High Voltage Vacuum Circuit Breaker

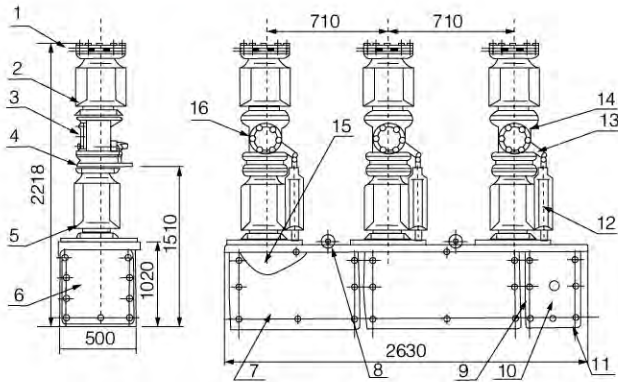
SUMMARY

ZW7-40.5 series outdoor high voltage vacuum circuit breaker is three phase AC 50Hz, rated voltage is 40.5kV outdoor high-voltage electrical equipment , attached the spring operator or electromagnetic actuator can be well controlled electric opening and closing can also be Manual storage, manually open and close. Design performance meet GB1984-89<AC high voltage circuit breakers>; national standards, and meet the IEC-56<high-voltage AC circuit breakers>; International Electro-technical Commission standards. ZW7-40.5 series vacuum circuit breaker is mainly used for outdoor 35kV power transmission system control and protection also applies to urban and rural power distribution networks and industrial and mining enterprises in the normal operation and short circuit protection purposes. The overall structure of the insulator pillar product type; built vacuum interrupter type on the vase, porcelain vase for the next pillar vase. For frequent operation place. And has good sealing, anti-aging, high pressure, no burning, no explosion, long life, convenient installation and maintenance features.

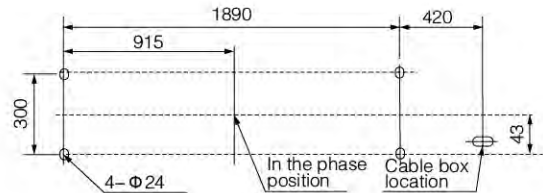
MODELS AND IMPLICATIONS



INSTALLATION DRAWING



ZW7-40.5 series vacuum circuit breaker general structure size drawing



ZW7-40.5 series vacuum circuit breaker installation drawing

- | | | | |
|-------------------------------|-----------------------|-------------------------------|------------------------|
| 1、Up outgoing line terminal | 5、Support insulator | 9、Door handle | 13、Crutch |
| 2、Vacuum circuit breaker | 6、Mechanism box | 10、Operate Mechanism (In box) | 14、Supporter |
| 3、Handing hole cover plate | 7、Door | 11、Earth rings | 15、Current transformer |
| 4、Down outgoing line terminal | 8、Swinging ring screw | 12、Insulation pulling lever | 16、Screw |

MAINLY TECHNICAL PARAMETERS

Item		Units	Value
Rated voltage			40.5
Rated insulation level	1 min power frequency withstand voltage	Dry	95
		Wet	80
	Lightning impulse withstand voltage (peak)		185
Rated current		A	1250、1600、2000
Rated short-circuit breaking current		kA	20、25、31.5
Rated operating sequence			0-0.3s-C0-180s-C0
Rated short-circuit breaking current breaking times		Times	20
Rated short-circuit closed current (peak)		kA	50、63、80
Rated peak withstand current			
Rated short-time withstand current			
Rated short-circuit duration		s	4
Average opening speed		ms	1.5±0.3
Average closing speed			0.6±0.3
Contact closing bounce duration		ms	≤ 5
Three phase closing and opening synchronism			≤ 2
Closing time			≤ 90
Opening time			≤ 60
Mechanism life		Times	10000
Rated operating voltage and auxiliary loop rated voltage		V	DC 110/220
			AC 110/220
Phase loop DC resistance (without current transformer)		μΩ	≤ 100
Permitted accumulate wear-thickness of dynamic and static contact		mm	3
Weight		kg	800

ZW20F-12 Series Outdoor Intelligent High Voltage Vacuum Circuit Breaker

SUMMARY

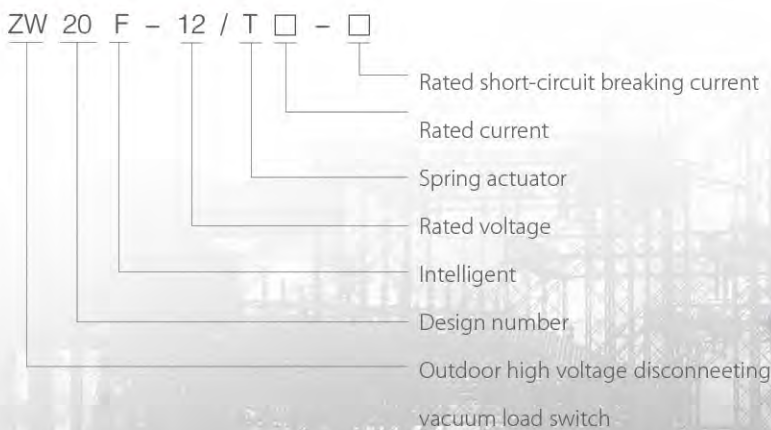
ZW20F Series outdoor high voltage vacuum circuit breaker (hereinafter referred to as breaker) for rated voltage 12kV, three-phase AC 50Hz outdoor distribution Electrical equipment. It uses vacuum interrupter and SF₆ gas insulating medium, is the ZW20-12 Vacuum Vreaker Type colum improved products. Insulation technology, also carried out into the outlet duct sealing performance improvements.

Leakage, from outside the environmental impact; the spring operating mechanism for a small design and the reliability of optimization, using direct-acting chain primary primary drive and multi-trip system, Reliability and stability of movement than domestic traditional spring operating mechanism is improved several times; main circuit contact between the shaft and sleeve with the inner structure of income outside the Zhang-style bracelets, main back Road contact resistance is small, low temperature rise. Therefore, ZW20-12 type outdoor vacuum circuit breaker is a kind of column maintenance-free product, is a pillar in the jia pin breaker.

ZW20F-12 than the ZW20-12 also increased the over-current protection, institutions spring energy storage instructions, and are equipped with air outlet for the second electrical connection, easy and intelligent controller Conmination.

Excellent electrical and mechanical properties, so that column ZW20F-12 type outdoor vacuum circuit breaker is widely used. Is mainly used for breaking. Closing 10kV power system Load current and short-circuit current, applicable to industrial and mining enterprises in the substation and distribution systems for the protection and control purposes, more suitable for frequent operation of power gryd places. This produvt and control Supporting device, with excellent feature overlap, can satisfy the distribution automation system requirements.

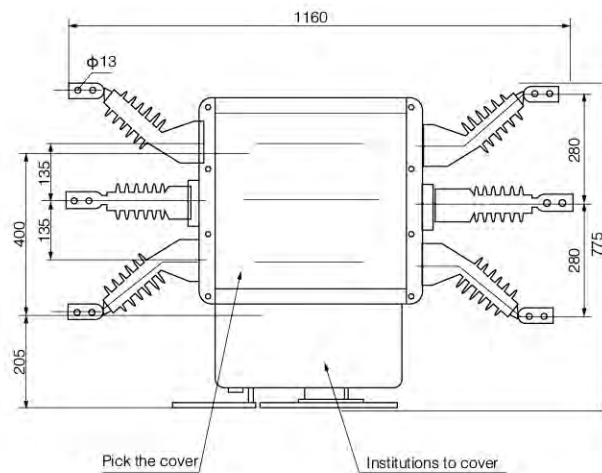
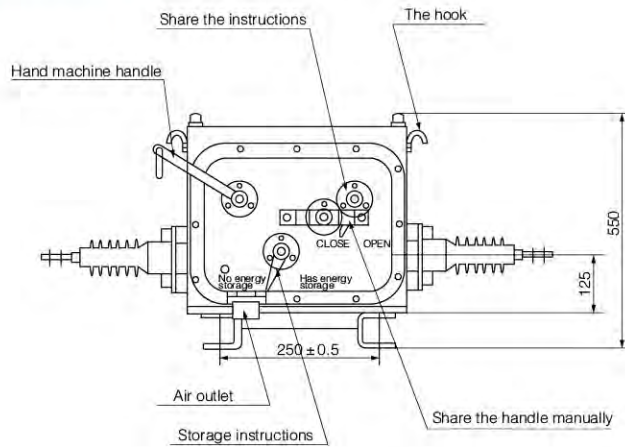
MODELS AND IMPLICATIONS



MAINLY TECHNICAL PARAMETERS

Item	Units	Parameters
Rated voltage	kV	12
Rated frequency	Hz	50
Rated short current	A	630、1000
Rated closed-circuit braking current	kA	12.5、16、20、25
Rated peak withstand current	kA	31.5、40、50、63
Rated short time withstand current(4s)	kA	12.5、16、20、25
Rated short-circuit making current (peak)	kA	31.5、40、50、63
Mechanical endurance	times	10000
Rated current dropout frequency	times	10000
Dropout times of rated short circuit dropout current	times	30
1min power frequency withstand voltage:vacuum fracture,white,relative ly/isolation Fracture	kV	42
Lighting impulse withstand voltage:white,relative to/isolation Fracture	kV	75
Secondary circuit 1min power frequency withstand	kV	2
Net Weight	kg	140

OUTLINE AND MOUNTING DIMENSION



FZW32-12,FZW32-40.5 Series Outdoor High Voltage Disconnecting Vacuum Load Switch

SUMMARY

FZW32-12,FZW32-40.5 series outdoor high voltage vacuum insulation vacuum load switch(hereinafter referred to as load switch),the technical performance indicators to achieve GB3804 and IEC standards,applies to three phase AV 50Hz,rated voltage of 12kV,and 40.5kV power supply network. widelyuse in rural power,urban networks and transformer of railway and other distribution lines especially for frequent operation place.

Load isolation switch is composed of a knife and vacuum interrupter isolating switch on and sub-knife assumed the role the Gate insulation,the vacuum interupter assume the role of the arc extinguished,no risk of explosion.

Do not need to overhaul,breaking capacity,log life power,isolation knife linkage with the three-phase vacuum interrupter,sub-gate,when a clear fracture,safe and reliabe.Installation:FZW32-12 in a single oad,manual-based,but also can use electric or close remote operation.The FZW32-40.5 double-rod,mainly electric operation,but also can be used manually or close remote operation.

Isolation knife is carried out jointly by a spring-off sub-switch operation,and had a knife in the spring provides the isolation needed for closing the energy and ensure that the sub-vacuum interrupter gate speed.Isolated three-phase knife linkage operation to ensure that the interrupter chamber over the same period of the sub-gate.

MODELS AND IMPLICATIONS

FZW 32 - 12(40.5) / T □ - □

Rated short-circuit withstand current

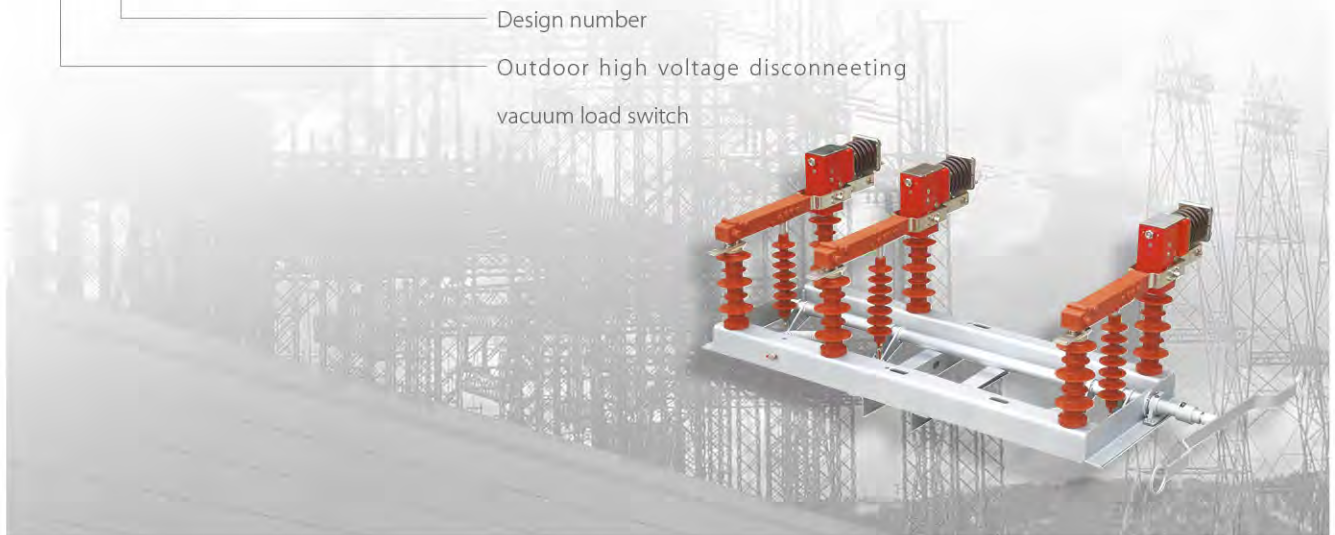
Rated current

Spring actuator

Rated voltage

Design number

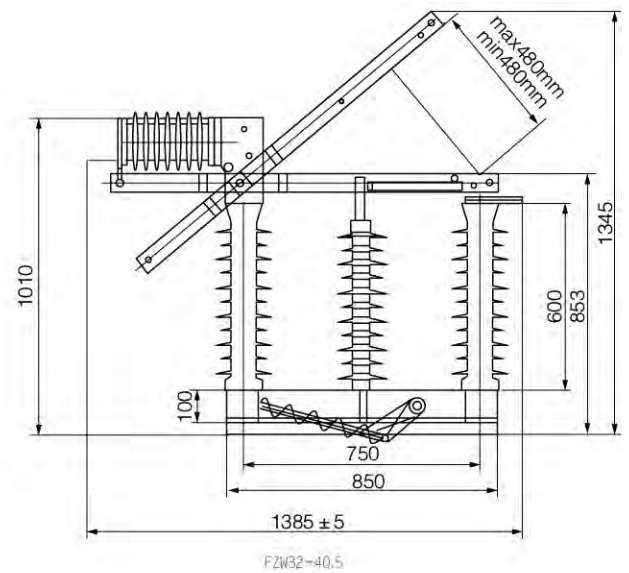
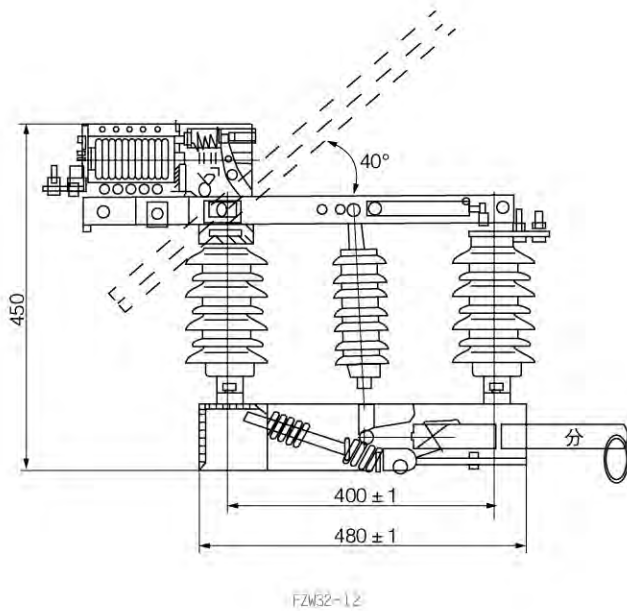
Outdoor high voltage disconnecting vacuum load switch



MAINLY TECHNICAL PARAMETERS

Item	Units	Parameters	
Rated voltage	kV	12	40.5
Rated frequency	Hz	50	50
Rated short current	A	630	1250
Rated mainly active load-breaking current	A	630	1250
Rated closed-loop braking current	A	630	1250
5% Rated mainly active load-breaking current	A	31.5	62.5
Rated cable-charging breaking current	A	10	10
1min power frequency withstand voltage:vacuum fracture,white,relatively/isolation Fracture	kV	42/48	95/110
Lighting impulse withstand voltage:white,relative to/isolation Fracture	kV	75/85	185/215
Rated short time withstand current(thermal stability)	kA	20	25
Rated duratin of short-circuit	S	4	4
Rated peak withstand current(dynamic stability)	kA	50	63
Rated short-circuit making current	kA	50	63
Mechanical endurance	times	10000	10000
Contact limit erosio of vacuum interrupter	mm	0.5	0.6
Manual operation moment	N.M	≤ 200	≤ 350

OUTLINE AND MOUNTING DIMENSION



FZW28-12 Series Outdoor Boundaries Vacuum Load Switch

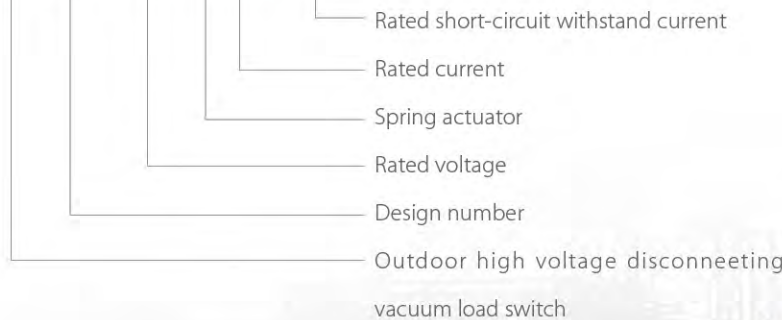
SUMMARY

Apply to rated voltage 12kV. Rated frequency 50HZ outdoor AC distribution equipment , use for opening ,closing load current and closing short circuit current . Applicable to substations and industrial and mining enterprises and city, rural network for protection and control purposes, and city, rural network automatic distribution net and frequent operation place .

Applicable to operation of control switch of overhead line distribution systems, there are several types, FZW28-12-type boundaries vacuum load switch with no oil, institutional simple. Reliable, no maintenance and other advantages, has been widely used. The product with the FDR-based fault detector or RTU remote terminal unit equipment combine to form a very simple structure, distribution automation system that allows the automatic overhead lines fault location and fault segment of the automatic quarantine. In order to update our existing distribution switchgear, so free of oil and automation features of the distribution equipment for the transformation.

MODELS AND IMPLICATIONS

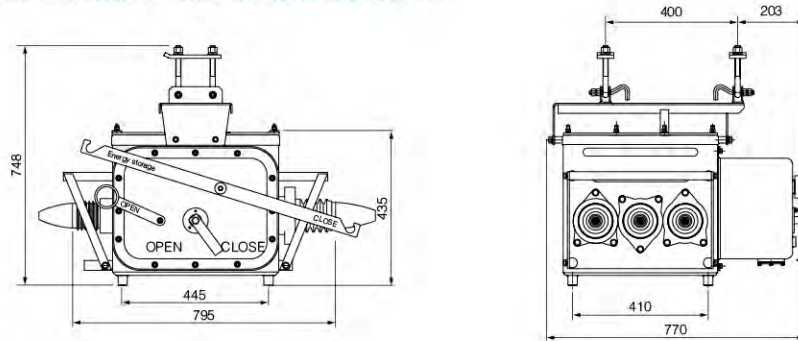
FZW 28 - 12 / T □ - □



THE USE OF ENVIRONMENTAL CONDITIONS

- Altitude: ≤1000m.
- Air temperature: -40℃ ~ +85℃
- Relative humidity: month average≤90%,day average ≤95%
- Earthquake intensity: ≤8 class
- Pollution withstand: III class
- Icing thickness:10mm
- Wind pressure: ≤700Pa(=wind speed 34m/s)

GENERAL STRUCTURE DRAWING AND INSTALLATION SIZE



MAINLY TECHNICAL PARAMETERS

Item	Units	Technical Parameters
Rated voltage	kV	12
Rated current	A	630
Rated frequency	Hz	50
Rated short time withstand current,time	kA	20, 4S
Rated short-circuit closing current (peak)	kA	50
Operate voltage	V	AC220(80%~110%)
1min power frequency voltages	Earth	50(GB 42)
	Inter-phase	50(GB 42)
	Fracture	50(GB 48)
Lightning impulse withstand voltage	Earth	95(GB 75)
	Inter-phase	95(GB 75)
	Fracture	110(GB 84)
Insulation resistance	Earth	2000
	Inter-phase	2000
	Fracture	2000
Per phase lead circuit resistance	$\mu\Omega$	≤ 500
Rated current disconnection life	Times	10000
Mechanical life	Times	10000
Weight	kg	185
Contact closing bounce duration	ms	≤ 5
Three phase closing and opening non-synchronism	ms	≤ 2
Closing time	ms	120~180
Opening time	ms	500~900
Contact travel	mm	8~9
Contact over travel	mm	2.5~4
Isolation fracture distance	mm	25~30
Isolation fracture over-distance	mm	7~14
SF ₆ Year leakage		< 1%
SF ₆ gas water contents	PPm	< 2
Reference standards		IEC265-1

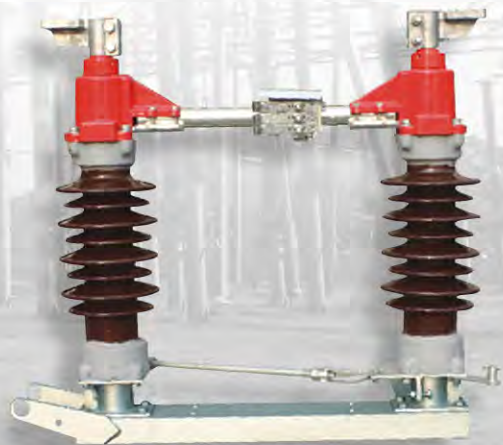
GW4 Series Outdoor High Voltage Disconnecting Switch

SUMMARY

GW4 series outdoor high-voltage isolation switch is widely used in power plants, substations and large industrial and mining enterprises for the three-phase AC 50Hz circuit, a voltage no-load hours, together with the circuits, products, electrical and mechanical performance in line with national standards GB1985 "AC High Voltage isolating switches and earthing switches" and "DL486 Yan left off ordering the exchange of high-pressure technical conditions" and the International Electrotechnical Commission IEC standard.

GW4 series isolation switch is a double-pole isolation switch, it is a unipolar-shaped, when the three most used, a very inter-connected with the zone axis machine. 3-pole synchronous use. GW4 series isolation switch from the base, insulation pillars and the conductive parts. GW4 series isolation switch each pole has two ceramic columns, respectively, at both ends with bearing base in order to cross-link connection (GW4 series isolating switch is only one fixed mounted on the base ceramic column the other end), can be rotated horizontally. GW4 series isolation switch conductive Knife divided into two halves, respectively, fixed to the two capitals on the porcelain for the level of sub-switch on, the contact contacts are found in the middle of two ceramic columns with actuator actuator column and a ceramic conductors rotate 91°, the other column and conductive ceramic body is also driven by the connecting rods rotate 91°, (GW4 series isolating switch actuator when the actuator, only mounted on one end of the base bearing column and conductive ceramic body rotate 91° the other end fixed). so the same side of the direction of guillotinc Pianxiang disconnCctcd or closed.

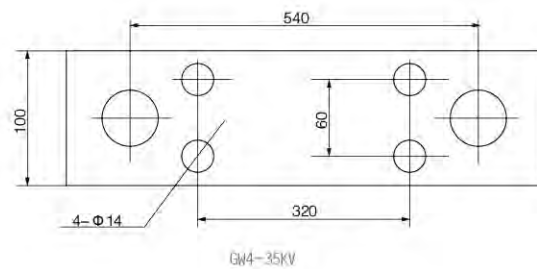
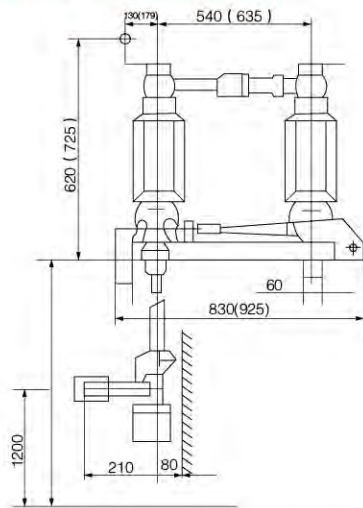
MODELS AND IMPLICATIONS



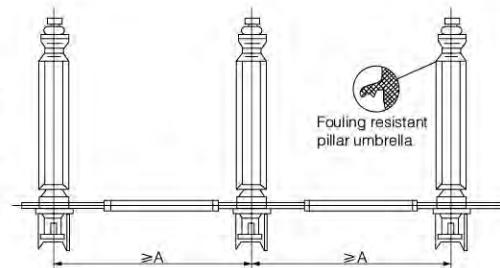
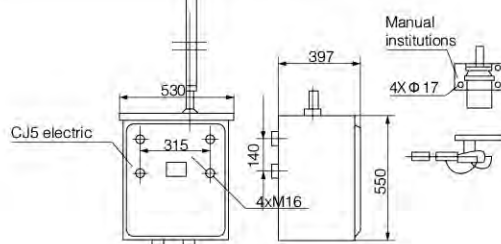
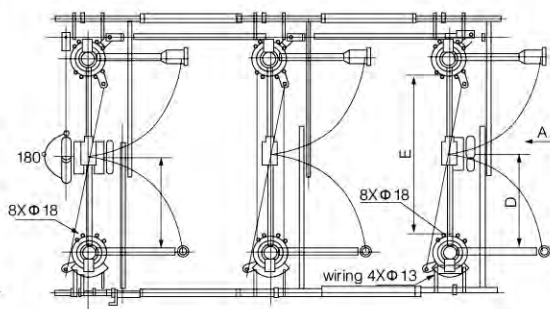
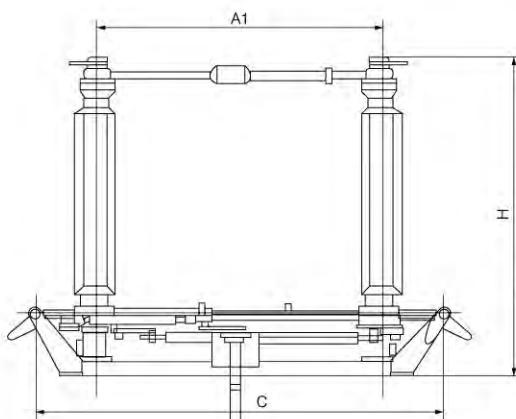
MAINLY TECHNICAL PARAMETERS

Item	GW4-40.5	GW4-72.5	GW4-126	GW4-220/245
Rated voltage	40.5	72.5	126	200/245
Rated current	630/1250/2000/2500	630/1250/2000/2500/4000	630/1250/2000/2500	1250/2000/2500
Rated short time withstand current(effective)	20/31.5/40	20/31.5/40	20/31.5/40	20/31.5/40
Rated maximum tolerance current (maximum)	50/80/100/104	50/80/100/104	50/80/100/104	80/100/104/125
Rated short frequency voltages	Earth	80	140	285(230)
	Fracture	110	160	210(265)
Rated lightning impulse withstand voltage(peak value)	Earth	185	325	450(550)
	Fracture	215	375	520(630)

OUTLINE AND MOUNTING DIMENSION



Rated voltage/kV	A	A1	H	E	D	C
63	1600	900	1170	660	450	
110	2000	1300	1515	1060	650	1750
145	2500	1650	1745	1410	825	2100



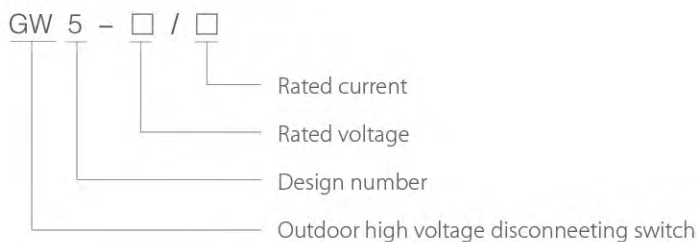
GW5 Series Outdoor High Voltage Disconnecting Switch

SUMMARY

GW5 series outdoor isolation switch is the power system, one of the most commonly used devices, the main role is to repair device or when the isolated high-voltage lines, to ensure security. It can not disconnect the load current and short-circuit current should be used in conjunction with the circuit breakers in the power outage of separation after the first division circuit breaker switch, power transmission when the first circuit breaker, after co-isolation switch.

GW5 series outdoor isolation switch is a double-column V-level open-type, the single stage by the base, pillar insulator, qualifying reservations and contact other components, into a 50° angle from the two bearings, pillar insulator porcelain insulator between the two pillars of insulation lip installed at both ends of the angle to bearing, and base vertical. Some of the insulation were installed into bottles of the top of the pillars, with the pillars of insulation bottle made about 90° rotation.

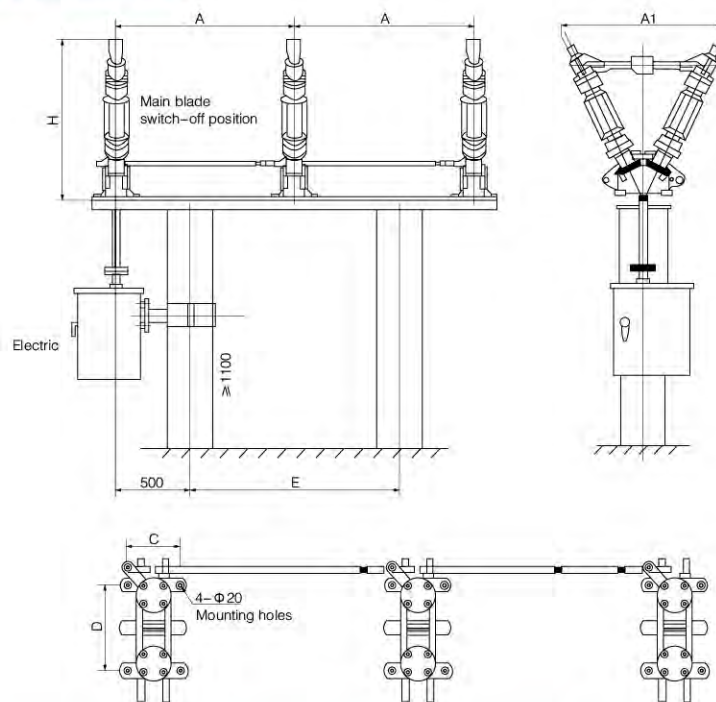
MODELS AND IMPLICATIONS



MAINLY TECHNICAL PARAMETERS

Item		Units	Value	
Rated voltage		KV	40.5/72.5/126	
Rated insulation level	1 min power frequency withstand voltage	To earth	KV	95/140/230
		To fracture	KV	115/160/245
	impulse withstand voltage	To earth	KV	185/325/550
		To fracture	KV	215/375/630
Rated frequency		Hz	50	
Rated current		A	630/1250/1600/2000	
Rated short-time withstand current		KA	20/31.5/40/40	
Rated short-circuit closed current (peak)		KA	50/80/100/100	
Rated short-circuit duration of the surge/ground knife		S	4/2	
Rated terminal mechanical loading	The level of vertical load	N	750/1000	
	The level of lateral load	N	500/750	
	Vertical force	N	750/1000	
Creepage		mm	1013/1256.1813/2248,3150/3906	
Mechanical life		times	2000	
Human Actuator	Model		CS17,CS17G	
	Control circuit voltage	V	AC220,DC110,DC220	
Motor actuator	Motor voltage	V	AC380,DC220,AC220	
	Control circuit voltage	V	AC220,DC110,DC220	

OUTLINE AND MOUNTING DIMENSION



Rated voltage(kV)	A	A1	H	E	C	D
40.5	1200	1075	1070	1400	240	300
72.5	1600	1285	1295	2200	240	300
126	2000	1660	1695	3000	240	300

GW1 Series Outdoor High Voltage Disconnecting Switch

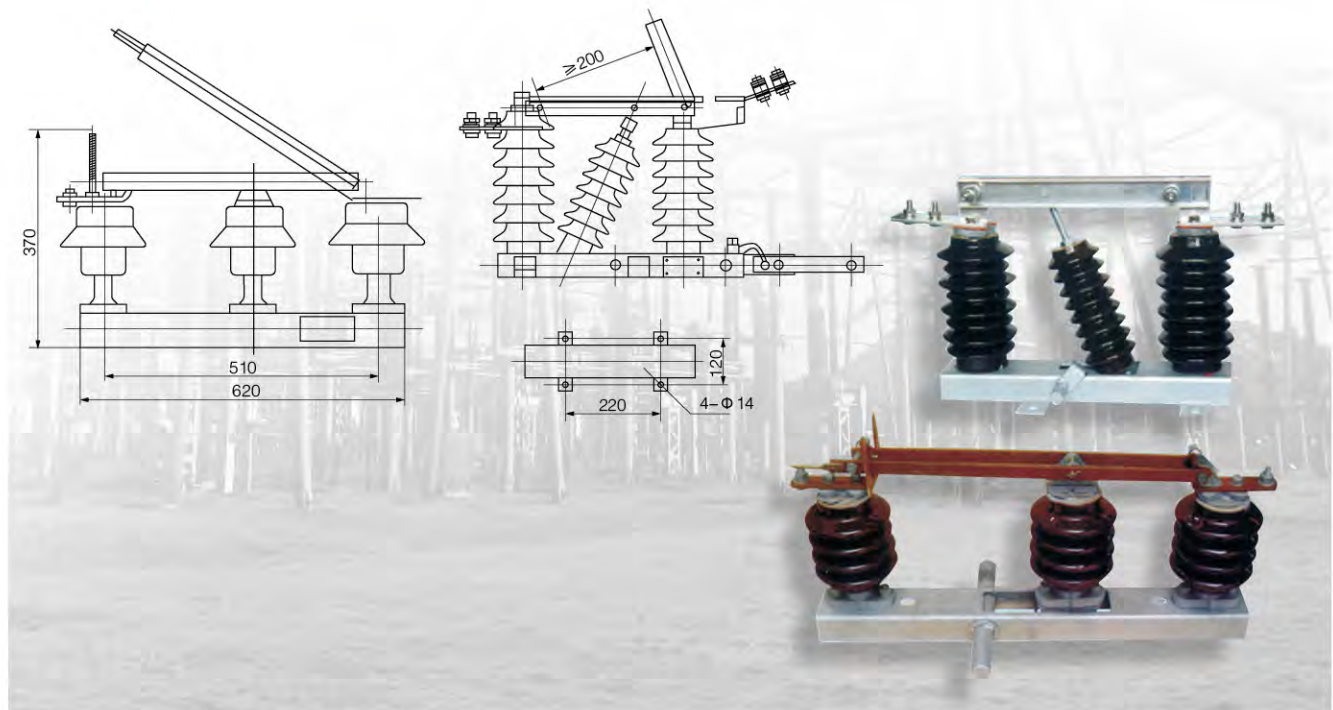
MODELS AND IMPLICATIONS



MAINLY TECHNICAL PARAMETERS

Item	Unit	Parameters
Maximum voltage	KV	10/15
Maximum work voltage	KV	12/20
Rated insulation level	Power-frequency withstand voltage	To Earth、40/40、 To fracture、47/47
	Impulse frequency	To Earth、105/105、 To fracture、120/126
Rated frequency	Hz	50
Rated current	A	200/400/630/1250
Thermal stability current 4 seconds(effective)	kA	6.3/12.5/20/31.5
Move current stability(maximum)	kA	16/31.5/50/80
Accessories frame		CS8-1,CS8-D,CS8-5manual actuator form,CJ61:motor actuator form

OUTLINE AND MOUNTING DIMENSION



GW9 Series Outdoor High Voltage Disconnecting Switch

MODELS AND IMPLICATIONS



MAINLY TECHNICAL PARAMETERS

Item	Unit	Parameters
Maximum voltage	KV	10/15
Maximum work voltage	KV	12/20
Rated insulation level	1min Power-frequency withstand voltage	To Earth、40/40, To fracture、47/47
	Impulse frequency	To Earth、105/105, To fracture、120/126
Rated frequency	Hz	50
Rated current	A	200/400/630/1250
Thermal stability current 4 seconds(effective)	kA	6.3/12.5/20/31.5
Move current stability(maximum)	kA	16/31.5/50/80

OUTLINE AND MOUNTING DIMENSION

