

General

ZN63S-12(VSI+) indoor high voltage AC vacuum circuit breaker is a kind of indoor high voltage switchgear of 3-phase AC, 50 HZ, with rated voltage of 7.2-12kV. It is used as protection and control element in electric wire netting equipment, power equipment of industrial and mineral enterprises.

The breaker conforms to the national standards of GB1984-89 "AC High Voltage Circuit Breaker", JB3855-96 "3.6~40.5kV indoor high voltage AC vacuum circuit breaker", DL403-91 "Technical conditions for ordering 10-35kV indoor high voltage vacuum circuit breaker" and as well as the relative IEC standards.

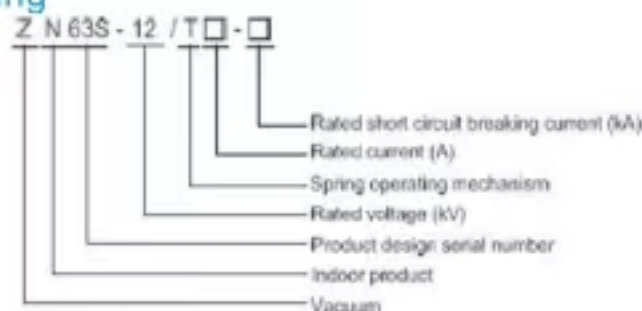
ZN63S-12(VSI+) indoor high voltage AC vacuum circuit breaker can operate frequently with ability of multi-breaking and quick on-switching. It has reliable interlocking function.

ZN63S-12(VSI+) indoor high voltage AC vacuum circuit breaker adopts the design of integrating the operating mechanism with the breaker, available for serving as permanently installed unit, or as hand-trolley unit after equipped with underframe.



ZN63S-12(VSI+)

Type & Meaning



Normal use condition

a. Altitude: not exceeding 1000m

b. Ambient temperature

Maximum: +40°C

Minimum: -15°C (-30°C is allowed during storage and transportation)

c. Ambient temperature

Daily average relative humidity: ≤ 95%

Monthly average relative humidity: ≤ 90%

Daily average saturated vapor pressure: ≤ 2.2×KPa

Monthly average saturated vapor pressure: ≤ 1.8×KPa

d. Used in the places free from any fire, explosion danger, severe pollution, chemical corrosion and intense vibration.

Any special use condition should be indicated to manufacturers before order.

Technical Data

1. Main technical parameters of breaker

No.	Item	Unit	Value			
1	Rated voltage	KV	12			
2	Rated frequency	HZ	50			
3	Rated lightning impulse withstand voltage (peak value)	KV	75			
4	Rated instantaneous power frequency withstand voltage (1 min)	KV	42			
5	Rated short circuit breaking current	KA	20	25	31.5	40
6	Rated current	A	630	63	1250	1600
					1250	1600
					2000	2500
					2500	3150
7	Rated instantaneous withstand current (effective value) KA		20	25	31.5	40
8	Rated peak value withstand current (peak value) KA		50	63	80	100
9	Rated short circuit making current (peak value) KA		50	63	80	100
10	Rated short circuit current lasting time	s	4			
11	Mechanical life	Times	30000			10000
12	Secondary circuit power frequency withstand voltage (1 min)	V	2000			
13	Rated operating sequence		O-1-CO-1 ¹ -CO			



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Note:20KA,25KA,31.5KA t=0.3s,t=180s 40KA t=180s t1=180s
Rated current 4000A and required mandatory cool wind

2.Mechanical features parameters of breaker

No.	Item	Unit	Value
1	Clearance between contact-head	mm	9±1
2	Contact-head travel	mm	3±0.5
3	Bouncing time of closing contacts	ms	≤2(40KA≤3)
4	Different time of switch-on/off of 3 phases	ms	≤2
5	Average switch-off speed	m/s	1.1±0.2
6	Average switch-on speed	ms	0.6±0.2
7	switch-off time(rated voltage)	ms	≤50
8	switch-on time(rated voltage)	ms	≤100
9	Rated switch-on/off operating voltage	V	AC110/220 DC110/220
10	Rated voltage of charging motor	V	AC110/220 DC110/220
11	Rated frequency of charging motor	W	70(40KA 100W)
12	Energy storage time	s	<10
13	Accumulated permitted wearing thickness of moving & static contact	mm	3
14	Resistance of main conductive circuit	630A	≤50μΩ
		1250A	≤45μΩ
		1600-2000A	≤35μΩ
		2500-3150A	≤25μΩ
15	Contact pressure of switch-on contact	4000A	≤20μΩ
		20KA-25KA	2000N-2500N
		31.5KA	3000N-3500N
		40KA	4500N-5000N



ZN63S-12(VSI+)

Structure of Products and Working Principle

1.General Structure of Breaker

ZN63S-12(VSI+)indoor high voltage ac vacuum circuit breaker consists of operating mechanism and interrupter,which are hald in front and at the back respectively.The main conductive circuit is of 3-phase structure.Operating mechanism and switchgear are relative separated.

2.Primary loop parts

1.Insulating tube type

The upper and lower lead-out and interrupter are installed in a tubular insulated cylinder,which is cast of epoxy resin with APG technology;therefore,it has high creepage resistance.The structure is designed in such a way that dust is not so easy to accumulate on the surface of interrupter,as a result,it can not only prevent the vacuum interrupter from being damaged due to external factors,but also ensure its high resistance to voltage effect in damp,hot and severer pollution environment.

2.Solid close pole-cylinder type

The upper and lower lead-out,conductive clip,soft connect,vacuum interrupter and insulated supportion are cast to pole-cylinder adopted mid-closed epoxy resin through special technology.The main characters are as follows:

a.High reliability:Reduce assemble and adjust link,thereby improving the mechanical reliability.User only fixes the solid closed polecylinder to the supporting of switch,and the center connects with mechanism through insulatiion stick.

b.Miniaturization:it use expoxy resin as insulation media.The distance can reduce to 30~50mm between phase and phase,and reduce the volume of vacuum circuit breaker and switchboard.

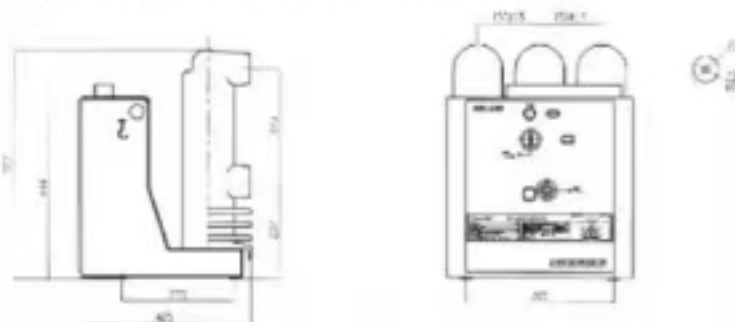
c.Increase creepage resistance distance:It increases the main conductive circuit's creepage resistance distance,interrupter's insulation level and resisting pollution.

d.Needless maintain:The interrupter is needless maintain and create the condition of breaker's needless maintain.



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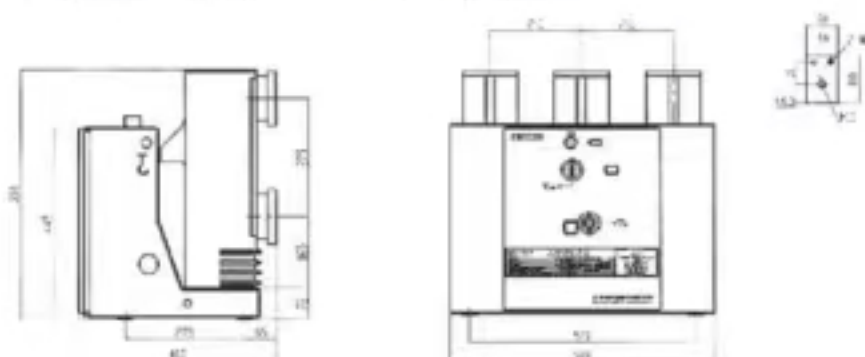
Overall dimension of withdrawable type ZN63S-12(VSI+)(Fig.7)



The mesh size of the moving,static contact shall be not less than 15mm,and distance shall be 150 ± 1.5 mm.

Rated current(A)	630	1250
Rated short circuit breaking current(KA)	20,25	25,31.5,40

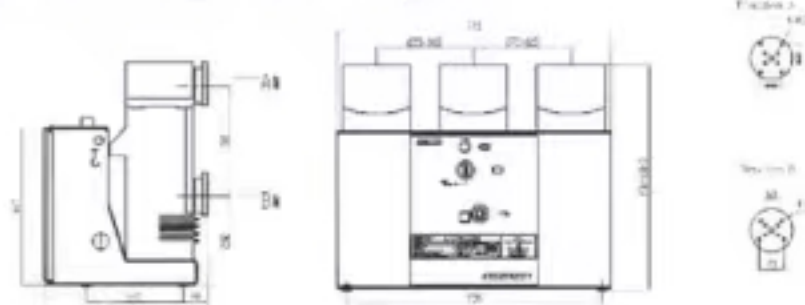
Overall dimension of withdrawable type ZN63S-12(VSI+)(Fig.8)



The mesh size of the moving,static contact shall be not less than 15mm,and distance shall be 210 ± 1.5 mm.

Rated current(A)	630	1250	1600
Rated short circuit breaking current(KA)	20,25	25,31.5,40	31.5,40

Overall dimension of withdrawable type ZN63S-12(VSI+)(Fig.9)



Note:The value in parentheses is the high of breaker with rated current 4000A

Rated current(A)	1600	2000	2500	3150/4000
Rated short circuit breaking current(KA)		31.5,40	31.5,40	40

Notes for placing order

The customer should specify the following:

- 1.Model,name and quantity of breaker;
- 2.The rated current and rated short circuit breaking current of breaker;
- 3.Rated operating voltage type and reted value(AC or DC);
- 4.Optional elements schedule;
- 5.Name and quantity of spare parts,components;
- 6.Any particular requirement should be indicated during placing order;