POWER TRANSMISSION AND
DISTRIBUTION PRODUCT SELECTION

PROFESSIONAL MANUFACTURER OF
HIGH AND LOW VOLTAGE PRODUCTS

CNC ELECTRIC

MV Circuit Breaker

ZN63(VS1)-12S Indoor Vacuum Circuit Breaker (pole-fixed and sealed)

- ZN63(VS1)-12P indoor AC MV vacuum circuit breaker is a three-phase AC 50HZ indoor switchgear with a rated voltage of 12KV. It can be used in industrial and mining enterprises, power plants and substations for the control and protection of electrical facilities, and is suitable for places with frequent operations.
- Standard: IEC 62271-100

General

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Selection

ZN63(VS1)	–	12	P	T	630	–	25	HT	P210
Name		Rated voltage(KV)	Pole type	Operating mechanism	Rated current(A)		Rated short-circuit breaking current(KA)	Installation	Phase spacing
Indoor vacuum circuit breaker		12:12KV	P: Solid -sealing type	T: Spring type	630, 1250, 1600, 2000, 2500, 3150, 4000		20, 25, 31.5, 40	HT: Handcart FT: Fixed type	P150, P210, P275

Note:
ZN63(VS1)-12P adopts a double spring integrated mechanism by default. If a single spring modular mechanism is required, a single spring needs to be added to the model backup;

Operating conditions

1. The ambient temperature is not higher than +40°C and not lower than -15°C (storage and transportation at -30°C are allowed);
2. The altitude is not higher than 1000m;
3. Relative temperature: the daily average is not more than 95%, and the monthly average The value is not more than 90%, the daily average value of saturated vapor pressure is not more than 2.2×10-'MPa, and the monthly average value is not more than 1.8×10MPa;
4. The seismic intensity does not exceed 8 degrees;
5. There is no fire, explosion hazard, serious pollution, Places subject to chemical corrosion and severe vibration.

Features

1. The arc extinguishing chamber and operating mechanism of the circuit breaker are arranged in a front-to-back configuration and connected as a whole through a transmission mechanism.
2. The hermetically sealed pole adopts epoxy resin insulation material to seal the vacuum arc extinguishing chamber and the main circuit conductive components as a whole.
3. The vacuum arc extinguishing chamber utilizes a hermetically sealed pole, enhancing the product's ability to withstand environmental pollution.
4. The operating mechanism adopts a spring-stored energy design, providing both electric and manual energy storage functions.
5. It features an advanced and rational buffer device, ensuring no rebound during disconnection and reducing disconnection impact and vibration.
6. It has advantages such as simple assembly, high insulation strength, high reliability, good product consistency, and maintenance-free operation.
7. The mechanical lifespan can reach up to 20,000 operations.

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Technical data

Technical datas are shown in Table 1

Item		Unit	Value			
Rated voltage		kV	12			
Rated insulation level	Rated lightning impulse withstand voltage (peak)		75			
	1min power frequency withstand voltage		42			
Rated current		A	630 1250		630, 1250, 1600, 2000, 2500, 3150	1250, 1600, 2000, 2500, 3150, 4000
Rated short circuit breaking current(KA)		KA	20	25	31.5	40
Rated thermal stable current (effective value)		KA	20	25	31.5	40
Rated dynamic stable current (peak value)		KA	63		80	100
Rated short-circuit making current (peak value)		KA	50	63	80	100
Rated short-circuit breaking current breaking times		Times	80		50	30
Secondary circuit power frequency withstand current		V	2000			
Rated operating sequence		/	Opening -0.3s - closing and opening - 180s - closing and opening -180s - closing and opening -180s - closing and opening (40kA)			
Rated thermal stability time		s	4			
Rated single/back to back capacitor bank breaking current		A	630/400			800/400
Mechanical life		Times	20000			10000

The mechanical characteristic parameters are shown in Table 2

Item	Unit	Value	
Contact distance	mm	11+1	
Contact travel		3.3±0.6	
Average closing speed (6mm~contact closed)	m/s	0.6±0.2	
Average opening speed (contact separation -6mm)		1.2±0.2	
Opening time (rated voltage)	m/s	20~50	
Closing time (rated voltage)		35~70	
Contact closing bounce time	m/s	≤2	≤3(40kA)
Three phase opening asynchrony		≤2	
Allowable cumulative thickness of wear for moving and stationary contacts	mm	3	
Main electrical circuit resistance	μΩ	≤50(630A) ≤35(1600~2000A)	≤45(1250A) ≤25(2500A and above)
Contact pressure of closing contacts	N	2000±200(20kA) 3100±200(31.5kA)	2400±200(25kA) 4500±250(40kA)

Opening and closing coil parameters are shown in Table 3

Item	Closing coil	Opening coil	Note
Rated operating voltage(V)	AC110/220 DC110/220	AC110/220 DC110/220	The opening coil shall not open when it is less than 30% of the rated operating voltage
Coil power(W)	245	245	
Normal operating voltage range	85% -110% rated voltage	65% -120% rated voltage	

Energy storage motor parameters are shown in Table 4

Model	Rated voltage	Rated input power	Normal operating voltage range	Energy storage time at rated voltage
ZYJ55-1	DC110	70	85% -110% rated voltage	≤15
	DC220			

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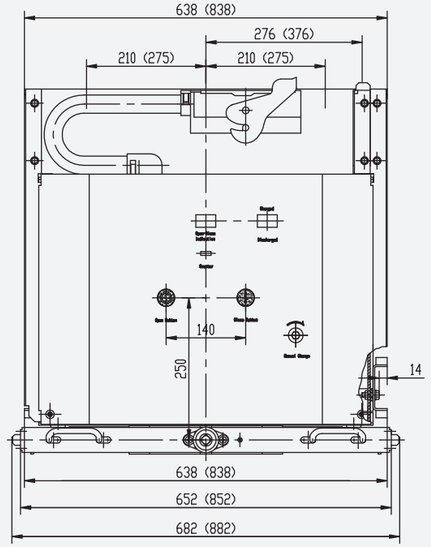
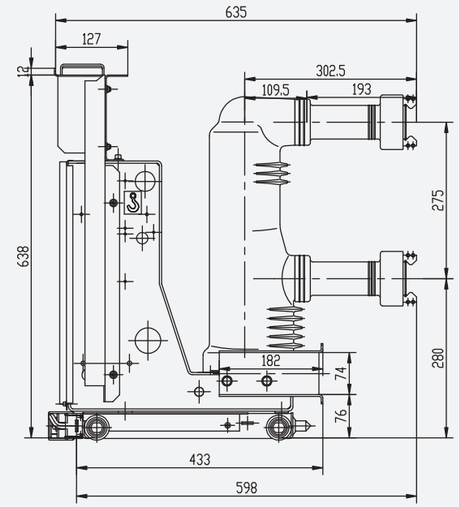
Overall and mounting dimensions(mm)

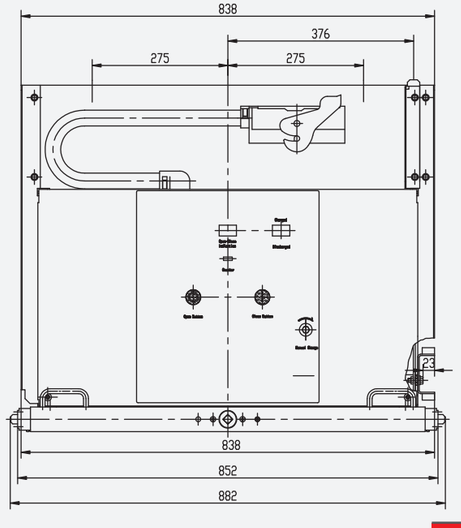
Handcart type outline size drawing (suitable for 800mm cabinet)

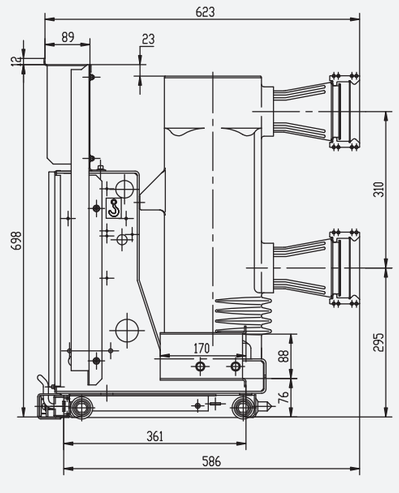




Rated current (A)	630	1250	1600
Rated short-circuit breaking current(KA)	20,25,31.5	25,31.5,40	31.5,40
Equipped static contact size (mm)	Φ35	Φ49	Φ55

Handcart type outline size drawing (applicable to 1000mm cabinet)





Rated current (A)	1600	2000	2500	3150	4000
Rated short-circuit breaking current(KA)	31.5,40		31.5,40		40
Equipped static contact size (mm)	Φ79		Φ109		

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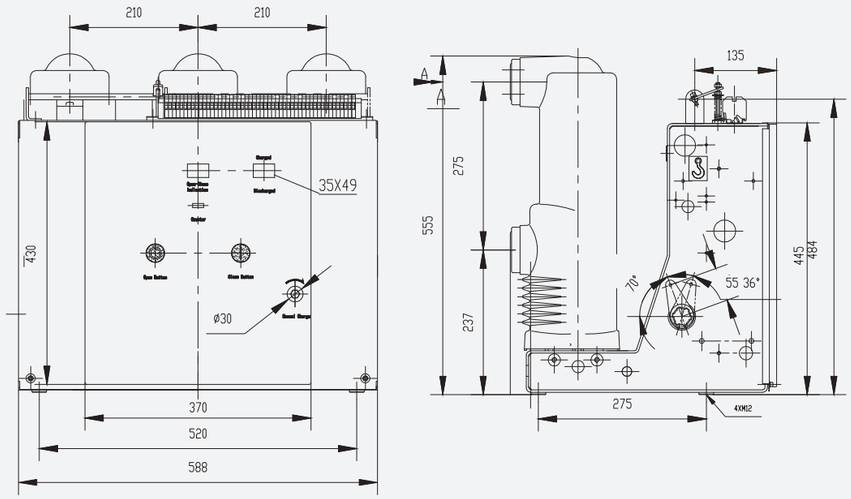
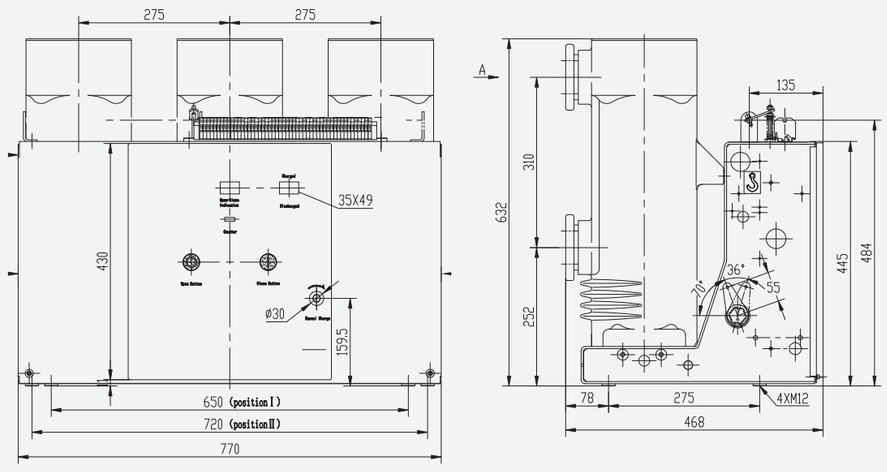
Fixed outline size drawing (for 800mm cabinet)



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

Fixed outline size drawing (applicable to 1000mm cabinet)



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