

## MV Circuit Breaker

### ZN63M-12 (Magnetic type ) Indoor Vacuum Circuit Breaker

- The ZN63M-12 vacuum circuit breaker adopts a permanent magnet operating mechanism, which is used to open and close various types of electric loads. It is suitable for occasions that operate frequently within the working current range and have certain requirements for the number of short-circuit breaking operations.
- Standard: IEC 62271-100

#### General

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#### Selection

ZN63M	12	P	M	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	No mark: Insulating cylinder type P Solid-sealing type	M: Insulating cylinder type permanent magne	630, 1250, 1600, 2000, 2500, 3150, 4000	20, 25, 31.5, 40	HT: Handcart FT: Fixed type	P150, P210, P275

#### Note:

The phase spacing of ZN63-12□M is usually P210mm, which is not marked on the model

#### Operating conditions

- Ambient temperature: upper limit +40°C; lower limit -25°C.
- Altitude: altitude not higher than 1000m.
- Relative humidity: daily average value is not more than 95%, monthly average value is not more than 90%; saturated vapor pressure : The daily average value is not greater than 2.2kPa, and the monthly average value is not greater than 1.8kPa.
- Earthquake intensity: less than 8.
- The amplitude of electromagnetic interference induced in the secondary system does not exceed 1.6kV. This product complies with relevant national standards and The industry standard requires that it be installed in a place without fire, explosion hazard, corrosive gas and severe vibration.

#### Features

- The arc extinguishing chamber and operating mechanism of the circuit breaker are arranged in a front-to-back configuration and connected as a single unit through a transmission mechanism.
- The operating mechanism employs a permanent magnet mechanism and has functions for electrically closing and opening the circuit as well as manually emergency tripping.
- The permanent magnet mechanism adopts a dual stable state form, characterized by intelligence, high reliability, long lifespan, and maintenance-free operation.
- During the operation of the circuit breaker, the energy of the permanent magnet mechanism is transferred to the linkage mechanism, which then transmits it to the moving contact part.
- The control circuit module exhibits high reliability and can withstand harsh conditions such as lightning strikes and surges during operation.
- The energy storage module adopts capacitor energy storage, characterized by short energy storage time and long lifespan.
- The mechanical lifespan is not less than 20,000 cycles.



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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)		50	63	80	100	
Rated short-circuit making current (peak value)		50	63	80	100	
Rated short-circuit breaking current breaking times	Times	30	30	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

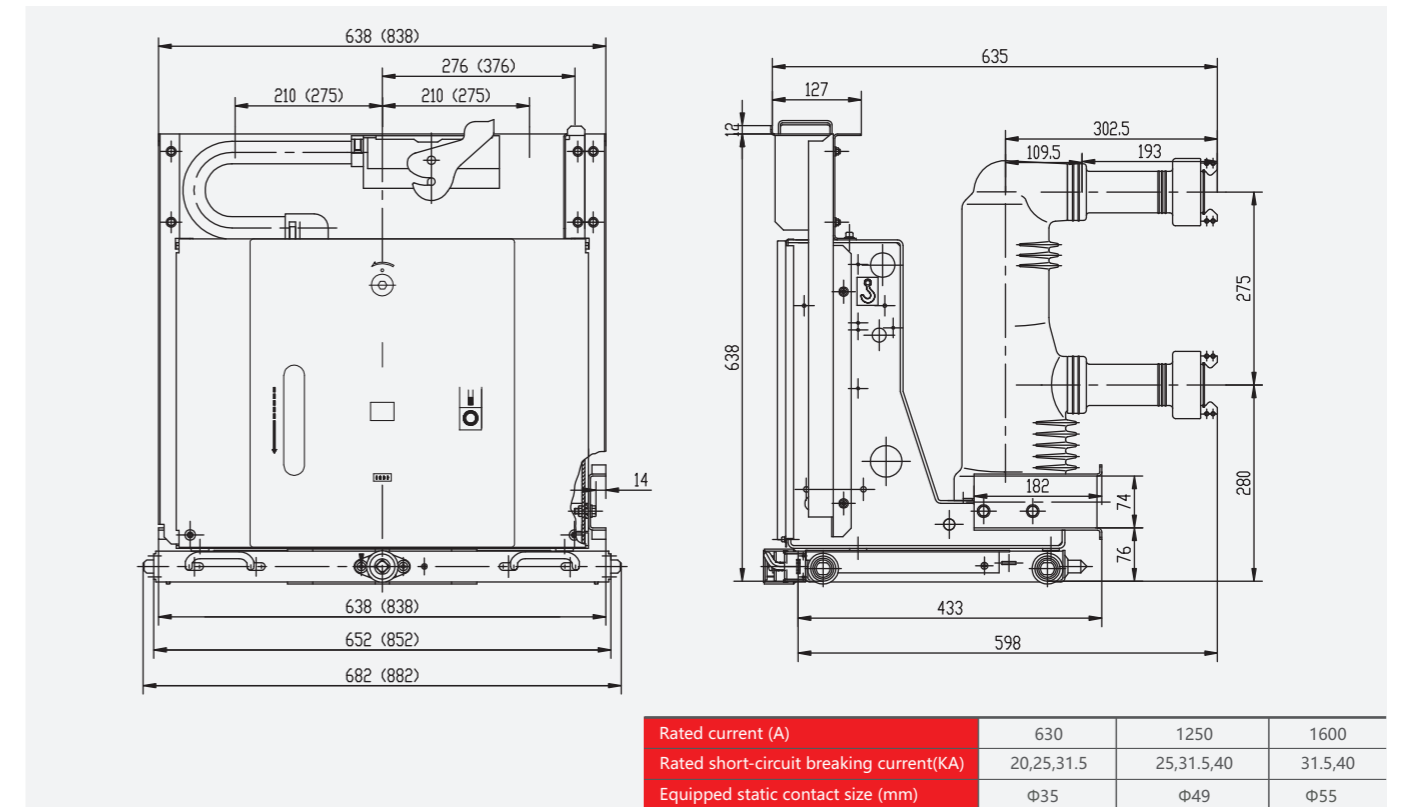
Item	Unit	Parameter
Contact travel	mm	11±1(Solid-sealing 9±1)
Contact overtravel	mm	3.0±0.5
Closing speed	m/s	0.6±0.2
Opening speed	m/s	1.0±0.2
Contact closing bounce time	ms	≤2
Three phase closing and opening asynchrony	ms	≤2
Closing time	ms	20≤t≤75
Opening time	ms	13≤t≤65
Permanent magnet drive power supply voltage	V	DC220
Energy storage time	s	< 10
Closing control voltage	V	AC/DC 110 , AC/DC 220
Opening control voltage	V	AC/DC 110 , AC/DC 220
Main circuit resistance	μΩ	≤45
Phase spacing	mm	150/210/275(40kA)

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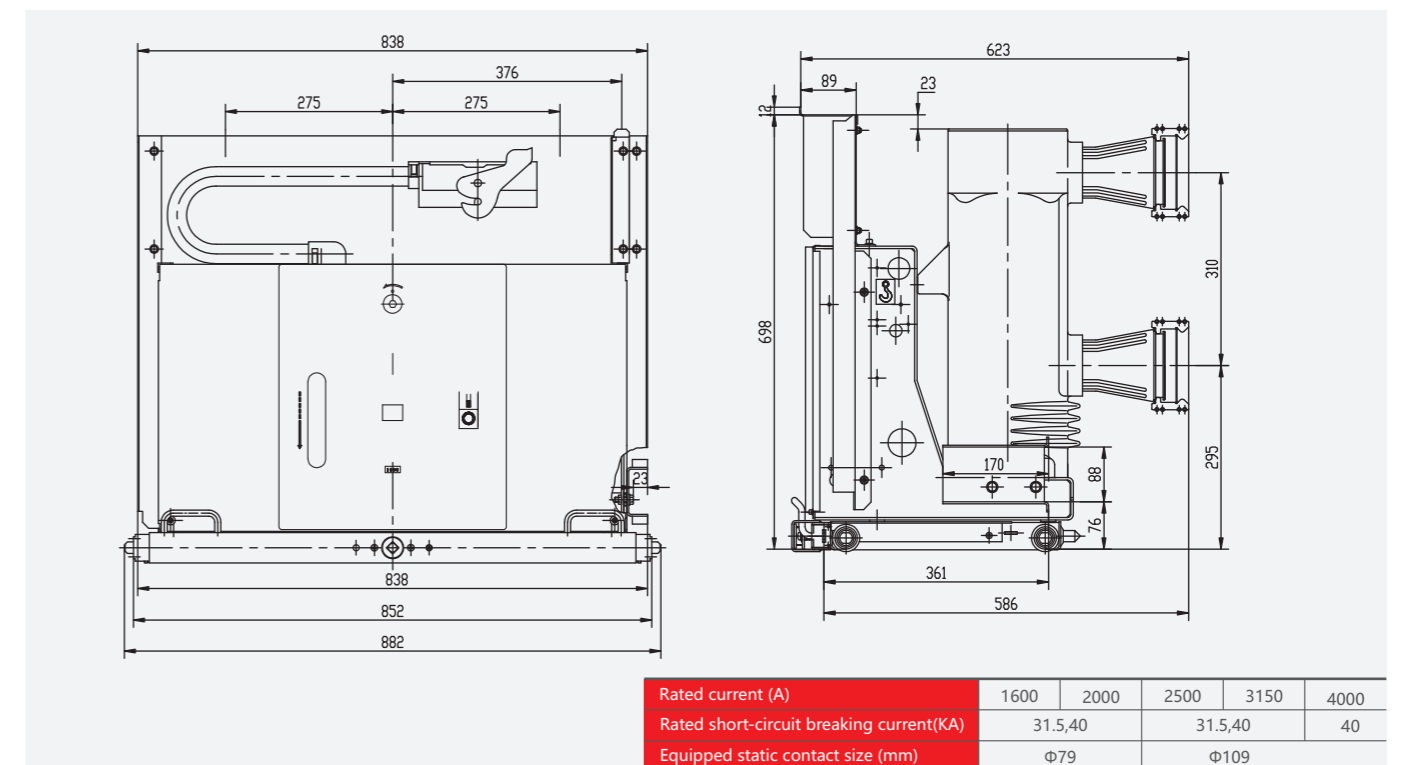
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#### Overall and mounting dimensions(mm)

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



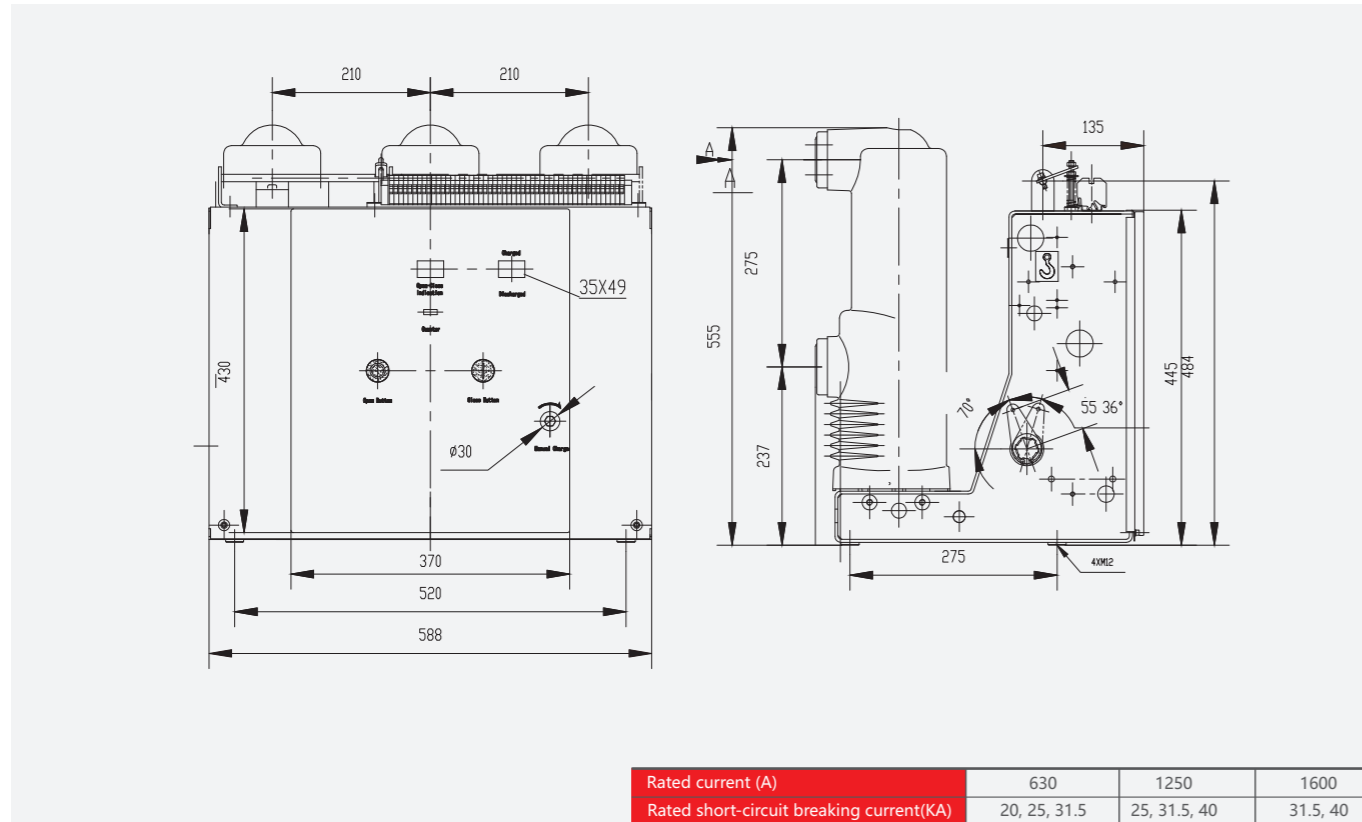
Handcart type outline size drawing (applicable to 1000mm cabinet)



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Fixed outline size drawing (for 800mm cabinet)



ZN63(VS1) -12 s fixed outline size drawing (for 1000 mm cabinet)

