

## MV Circuit Breaker

### ZN23-40.5 Indoor Vacuum Circuit Breaker

- ZN23-40.5 MV vacuum circuit breaker is indoor MV distribution device of three-phase AC 50Hz, rated voltage 40.5kV, can be matched with JYN35/GBC-35 type switch cabinet. Suitable for control and protection in power plant, substation and power distribution system, especially suitable for frequent operation places. The vacuum circuit breaker is handcart type, with reasonable structure, convenient maintenance, safe and reliable use.

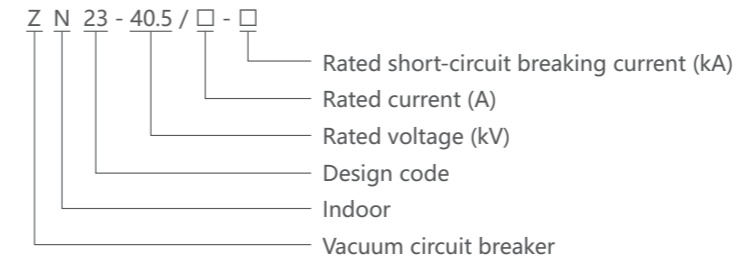
#### General



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#### Selection



#### Operating conditions

- The environment temperature: upper limit +40°C, lower limit -15°C (cold area -25°C);
- Altitude: not more than 2000m;
- Relative humidity: daily average value is not greater than 95%, monthly average is not greater than 90%;
- Saturated steam pressure: daily average value is not higher than  $2.2 \times 10^{-3}$  Mpa, monthly average is not higher than  $1.8 \times 10^{-3}$  Mpa;
- Earthquake intensity does not exceed 8 degrees;
- No fire, explosion, pollution, chemical corrosion and severe vibration place.

#### Features

- The overall structure of circuit breaker is handcart type, use CT19 or CD10 mechanism, can be divided into JYN1 and GBC two kinds of structure.
- The circuit breaker body is composed of frame, insulator, vacuum interrupter, spindle and moving and static bracket. The bottom surface of the frame is equipped with 4 wheels, for moving circuit breaker, etc. the right side of the frame is equipped with 6 insulator as support, fixed moving and static support use, vacuum interrupter installed between the dynamic, static support, the circuit breaker has the characteristics of small volume, simple structure, long service life, easy maintenance, no explosion danger, no pollution etc..

#### Principle of operation

The circuit breaker is equipped with middle sealing longitudinal magnetic field vacuum interrupter, when the dynamic, static contact of vacuum interrupter is separated charged, contact gap will produce vacuum arc and extinguished when the current over zero. Due to the special structure of contact, the contact gap will produce appropriate longitudinal magnetic field during contact arc, the arc uniformly distributed on the surface of the contact, maintaining a low arc voltage, so that less electric corrosion speed and the arc chamber with high arc media recovery strength, improve the circuit breaker breaking short-circuit current capability and life electrical.

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### Technical data

Item	Unit	Parameter		
Parameters of voltage, current, life				
Rated voltage	kV	40.5		
Rated short time power frequency withstand voltage (1min)	kV	95		
Rated lightning impulse withstand voltage (peak)	kV	185		
Rated frequency	Hz	50		
Rated current	A	1250	1600	2000
Rated short-circuit breaking current	kA	25	31.5	
Rated short-time withstand current (RMS)	kA	25	31.5	
Rated peak withstand current	kA	63	80	
Rated short-circuit closing current	kA	63	80	
Rated single / back-to-back capacitor bank breaking current	A	600/400		
Rated short-circuit current duration	S	4		
Rated short-circuit current breaking times	Times	20		
Rated operating sequence		O-0.3s-CO-180s-CO		
The main galvanic circle resistance	$\mu\Omega$	$\leq 65$		
Rated operation voltage		$U_2$ 220/110		
Mechanical life	Times	$\geq 10000$		
Mechanical property parameters				
Open clearance between contacts	mm	$22 \pm 2$		
Overtravel	mm	$6 \pm 1$		
Contact closing bounce time	ms	$\leq 3$		
Three-phase, switching synchronism	ms	$\leq 2$		
Average opening speed	m/s	$1.7 \pm 0.2$		
Average closing speed	m/s	$0.75 \pm 0.2$		
Opening time (rated voltage)	ms	$\leq 90$		
Closing time (rated voltage)	ms	$\leq 60$		
Allowable wear thickness for dynamic and static contact	mm	3		

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### Overall and mounting dimensions(mm)

