

MV Circuit Breaker

ZW32-24 Outdoor Vacuum Circuit Breaker

- ❖ ZW32-24 outdoor MV vacuum circuit breaker (Hereinafter referred to as the circuit breaker) is outdoor distribution equipment with rated voltage 24KV, three phase AC 50Hz. It is mainly used for breaking and closing the load current, overload current and short circuit current of power system. Applied to substation and industrial and mining enterprises in power system for protection and control use, more suitable for rural power grid and the frequent operation place.
- ❖ The installation instructions provided content of circuit breaker references, the using condition, type and rated parameters, structure characteristics, working principle, order information, and operation, installation, use, maintenance principle and method etc..
- ❖ Standard: IEC 62271-100

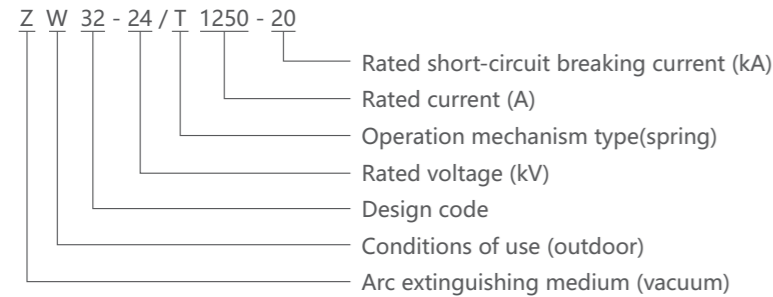
General



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Selection



Operating conditions

1. Ambient air temperature: The daily temperature variation: $-40^{\circ}\text{C} \sim +40^{\circ}\text{C}$ diurnal variation of temperature less than 25°C ;
2. Altitude: no more than 2000 meters
3. Wind speed is no more than 35m/s (equivalent to 700Pa on the surface of the cylindrical);
4. Ice cover thickness no more than 10mm;
5. The intensity of sunshine not more than $1000\text{W}/\text{m}^2$
6. Pollution degree no more than GB 5582 IV class
7. Seismic intensity does not exceed 8 class
8. No flammable, explosive, chemical corrosion and severe vibration place
9. the conditions of use exceed the above-mentioned regulations, it shall be determined through consultation between the user and the manufacturer.

Quoted standard

1. GB 1984-2003 AC high voltage circuit breaker
2. GB 3309-1989 Mechanical test of high voltage switchgear at room temperature
3. GB 5582-1993 The pollution level of insulating high voltage electric power equipment
4. GB 1985-2004 AC high voltage isolation switch and earthing switch
5. GB/T 11022-1999 Common technical requirement for high voltage switch equipment and control equipment standard
6. GB 16927.1-1997 The first part of high voltage test techniques: General test requirements
7. DL/T 402-2007 Technical conditions for AC high voltage circuit breaker order
8. DL/T 593-2006 The common technical specification of high voltage switch equipment and control equipment standards

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Technical data

Table 1

Item	Unit	Parameter			
Rated voltage	kV	24			
Rated insulation level	1min Power frequency withstand voltage	Dry test	kV		65/79 (isolation fracture)
		Wet test	kV		50/64 (isolation fracture)
		The auxiliary circuit and control circuit	kV		2
	Lightning impulse withstand voltage (peak)	kV		125/145 (isolation fracture)	
Rated frequency	Hz	50			
Rated current	A	630, 1250			
Rated operating sequence		O-0.3s-CO-180s-CO			
Rated short-circuit breaking current	kA	16	20	25	
Rated short-circuit closing current (peak)	kA	40	50	63	
Rated peak withstand current	kA	40	50	63	
Rated short-time withstand current	kA	16	20	25	
Rated short circuit duration	S	4			
Rated short-circuit breaking current times	Times	20/25			
Breaking Times of rated current	Times	10000			
Closing time	ms	20~80			
Opening time	Under maximum operating voltage	ms			20~80
	Under rated operation voltage	ms			20~80
	Under lowest operating voltage	ms			20~80
Full off time	Times	≤ 100			
Mechanical life	J	10000			
Switch on power	W	70			
Energy storage motor rated input power	V	≤ 70			
Rated operational voltage and auxiliary circuits rated voltage	V	DC, AC 220			
Energy storage time under rated voltage	S	≤ 8			
Overcurrent release	Rated current	A			5
	Tripping current accuracy	%			± 10

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Circuit breaker after assembly and adjustment should meet the requirements of Table 2

Table 2

Item	Unit	Parameter
Open clearance between contacts	mm	13±1
Contact overtravel	mm	3±1
Average opening speed	m/s	1.5±0.2
Average closing speed	m/s	0.8±0.2
Contact closing bounce time	ms	≤3
Three-phase tripping over the same period of time	ms	≤2
DC resistance of circuit for every phase (with isolating switch)	μΩ	≤60(150)
Allowable wear thickness for dynamic and static contact	mm	3
Phase center distance	mm	380±1.5
The closing state rated contact spring pressure	N	2000±200

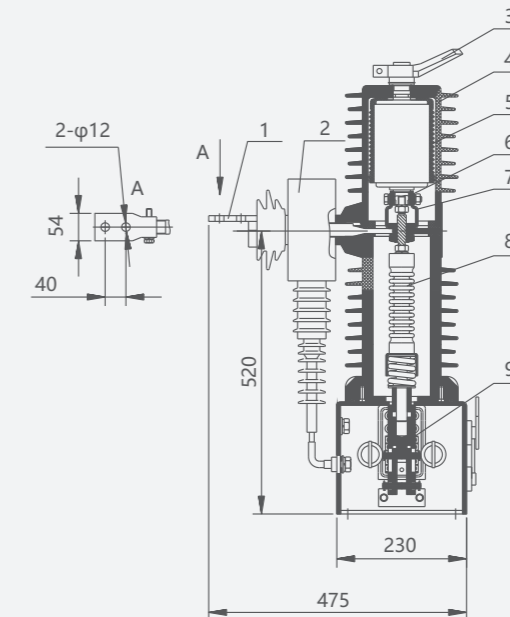
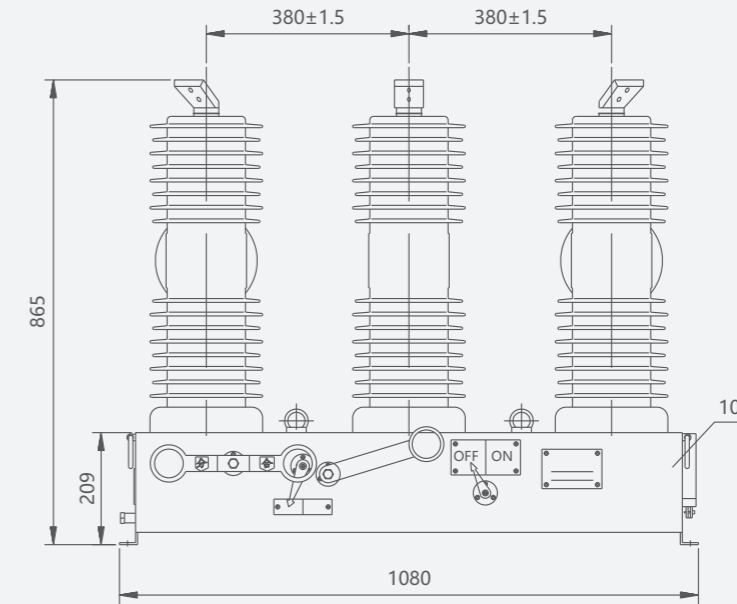
Circuit breaker equipped isolation switch rated parameters

Table 3

Item	Unit	Parameter	
Rated voltage	KV	24	
Rated frequency	Hz	50	
Rated current	A	1250	
Rated peak withstand current	kA	50	
Rated short-time withstand current	kA	20	
Rated short circuit duration	s	4	
Mechanical life	Times	2000	
Isolation switch fracture operation torque	N*m	≤300	
Contact blade spring pressure	N	300±30	
Rated terminal static mechanical load	Horizontal longitudinal load	N	500
	Horizontal transverse load	N	250
	Vertical force	N	300

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Overall and mounting dimensions(mm)



- 1. lower outlet
- 2. current transformer
- 3. upper inlet
- 4. insulating pillar
- 5. the vacuum interrupter
- 6. wire guides
- 7. flexible connection
- 8. insulated tension pole
- 9. actuator
- 10. case