



ZN23-40.5

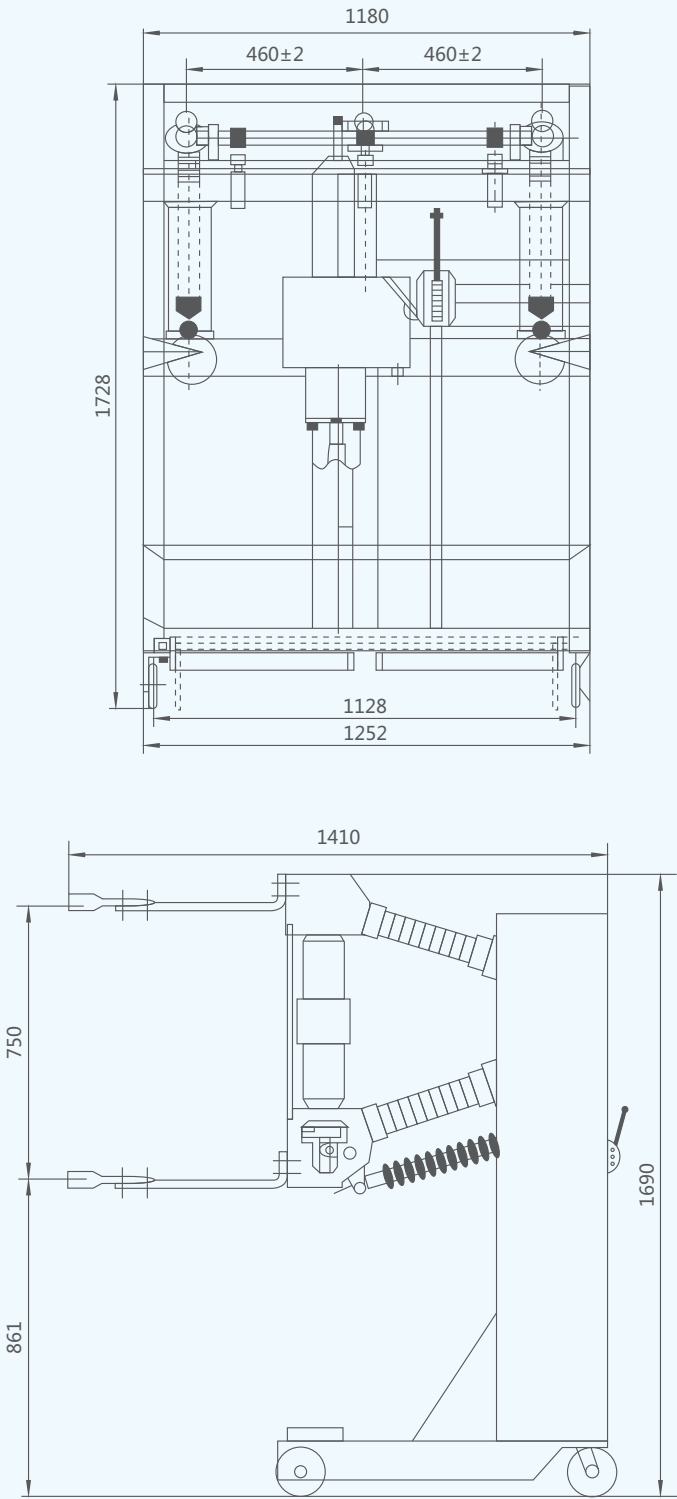
Principle of Operation

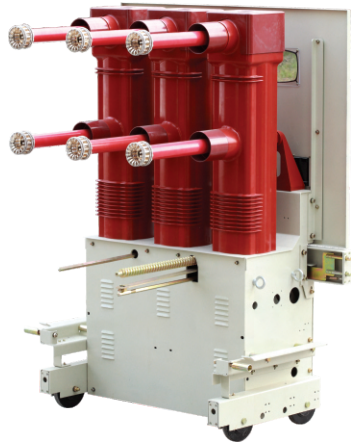
The circuit breaker is equipped with middle sealing longitudinal magnetic field vacuum interrupter, when the dynamic, static contact of vacuum interrupter is separated charged, contact gap will produce vacuum arc and extinguished when the current over zero. Due to the special structure of contact, the 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.

Technical Specification

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	μΩ	≤65		
Rated operation voltage		≒ 220/110		
Mechanical life	times	≥10000		
Mechanical property parameters				
Open clearance between contacts	mm	22±2		
Overtravel	mm	6±1		
Contact closing bounce time	ms	≤3		
Three-phase, switching synchronism	ms	≤2		
Average opening speed	m/s	1.7±0.2		
Average closing speed	m/s	0.75±0.2		
Opening time (rated voltage)	ms	≤90		
Closing time (rated voltage)	ms	≤60		
Dynamic, static contact allowed to wear thickness	mm	3		

Outline and Mounting Dimensions





ZN85-40.5

General Introduction

ZN85-40.5/T2000-31.5 type indoor high voltage vacuum circuit breaker (hereinafter referred to as circuit breaker), suitable for three-phase AC 50Hz, rated voltage 40.5kV power system, can be used for industrial and mining enterprises, power plant and substation as opening and closing load current, overload current, fault current use. Circuit breaker and operating mechanism adapt the upper and lower arrangement of institutions, effectively reducing the circuit breaker depth. Three-phase arc extinguishing chamber and associative charged body is isolated by three independent epoxy resin insulating cylinder, composite insulating structure, circuit breaker meet under normal operating conditions the air distance and the creepage distance requirements, and effectively reduces the volume of circuit breaker. The main galvanic circle vacuum interrupter and dynamic and static conductive connection installed in the insulating cylinder, the phase spacing is only 300mm. Connect of the main circuit electric all adopt the fixed connection, has the very high reliability. Insulating cylinder is arranged on the upper side of the circuit breaker frame. The overall layout is reasonable, beautiful appearance, simple. It has the characters of small volume, flexible operation, with reliable electrical performance, long service life, convenient maintenance, maintenance free. The circuit breaker is suitable for frequent operation and various occasions and operating conditions are harsh place.

Main features

- 1. Adopt the lead screw propulsion mechanism, labor saving, stable, good self-locking performance.
- 2. Small volume, flexible operation, with characters of reliable electrical performance, long service life, easy maintenance, low maintenance.

Installation

- 1. The installation form of ZN85 vacuum circuit breaker in switch cabinet can be fixed, can also be drawout style, has good interchangeability.
- 2. This series handcart type circuit breaker is mainly used for 1400mmKYN61 ground cabinet, fixed type circuit breaker is used for XGN-40.5, GG1A-40.5 and box type substation etc..

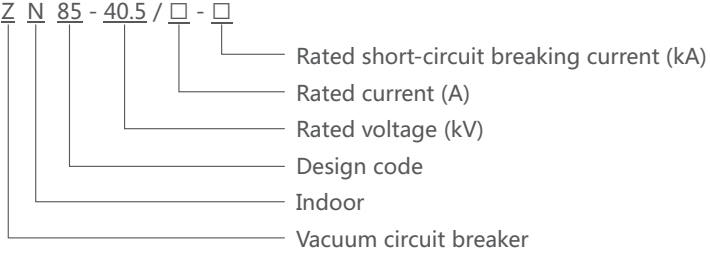
Actuator

- 1. Vacuum circuit breaker ZN85 using the integral type 3AV3 spring operating mechanism, mechanism is relatively mature, stable and reliable.
- 2. Mechanism design is simple, the output curve and the performance is more suitable for the characteristics and requirements of 40.5kV vacuum circuit breaker.



ZN85-40.5

Model and Meaning



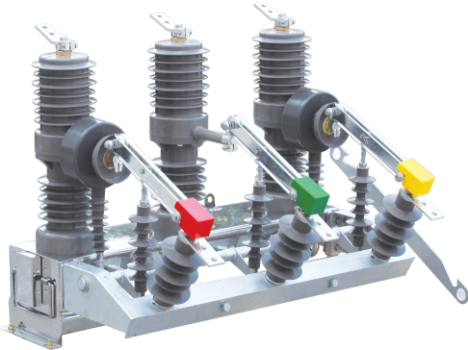
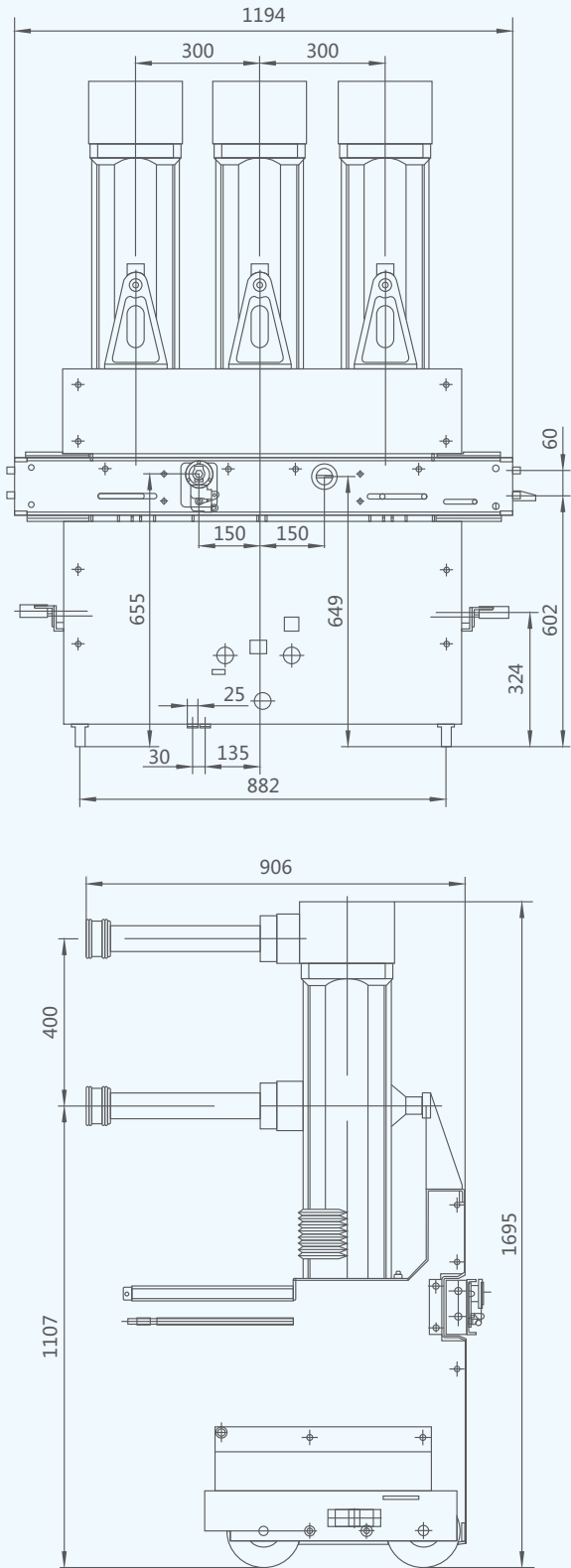
Technical Specification

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	μΩ	≤65	
Rated operation voltage		≒ 220/110	
Mechanical life	times	≥10000	
Mechanical property parameters			
Open clearance between contacts	mm	22±2	
Overtravel	mm	6±1	
Contact closing bounce time	ms	≤3	
Three-phase, switching synchronism	ms	≤2	
Average opening speed	m/s	1.7±0.2	
Average closing speed	m/s	0.75±0.2	
Opening time (rated voltage)	ms	≤90	
Closing time (rated voltage)	ms	≤60	
Dynamic, static contact allowed to wear thickness	mm	3	



ZN85-40.5

Outline and Mounting Dimensions



ZW32-12

Can be equipped with power electronics  
PT for short distance remote control  
Can be equipped with dual power supply  
automatic switching device  
Can be equipped with intelligent  
automatic recloser  
Can be equipped with prepayment  
metering automation system

General Introduction

ZW32-12 type outdoor H.V. vacuum circuit breaker is the outdoor distribution equipment with rated voltage 12KV, three phase AC 50Hz. It is used in substation and industrial and mining enterprises distribution system for protecting and controlling use. It is also used in rural power grid places with frequent operation for breaking and closing the load current and over load current and short circuit current of power system.

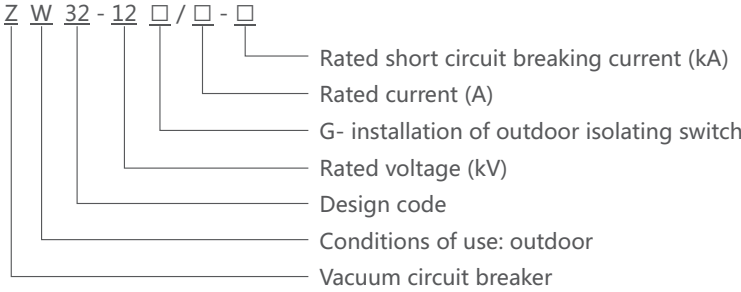
The out insulation of the vacuum interrupter adopt silicone rubber casing, with longer life, higher reliability, good weather resistance, convenient for transportation, good rating. The operating mechanism adopt miniaturization, high reliable spring operation mechanism, has the advantages of simple structure, mechanical life up to 10000 times.

This circuit breaker and controller can form a complete set as recloser, realize remote control, telemetry, remote communication, remote adjustment four remote function. Product features: no combustion and explosion hazards, maintenance free, small size, light weight (less than 100kg), long service life (million), safety and reliability, simple operation, convenient maintenance and installation.

Working Conditions

- 1. The environment temperature: upper limit +40°C, lower limit -30°C
- 2. Altitude ≤ 2000 meters
- 3. Wind pressure: no more than 700Pa (corresponding to the wind speed 34m/s)
- 4. Earthquake intensity: do not exceed 8 degree
- 5. Pollution grade: III class
- 6. Maximum daily temperature: less than 25°C.

Model and Meaning



ZW32-12 Type  
Outdoor High Voltage Vacuum Circuit Breaker



ZW32-12

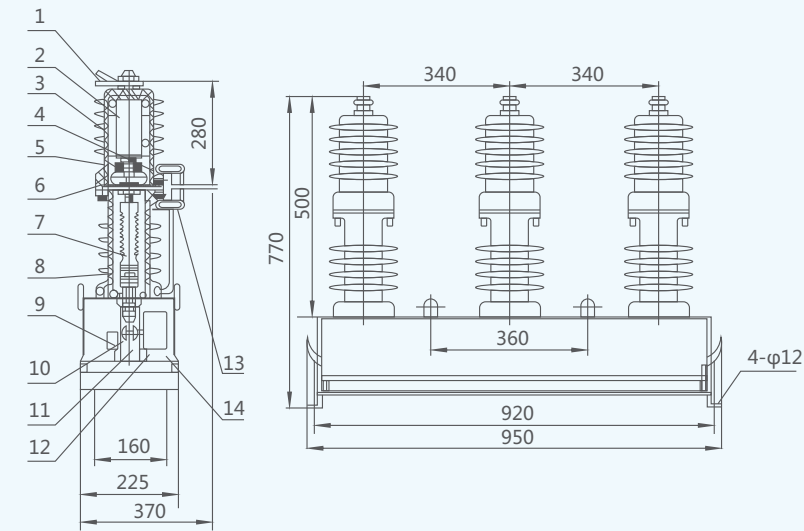
Technical Specification

Item		Unit	Parameter	
Voltage, current parameters				
Rated voltage		kV	12	
Rated short time power frequency withstand voltage (1min)		kV	42	
Rated lightning impulse withstand voltage (peak)		kV	75	
Rated frequency		Hz	50/60	
Rated current		A	630	1250
Rated short-circuit breaking current		kA	20	
Rated short-time withstand current (RMS)		kA	20	
Rated peak withstand current		kA	50	
Rated short-circuit closing current		kA	50	
Rated single / back-to-back capacitor bank breaking current		A	630/400	
Rated short-circuit current duration		S	4	
Rated short-circuit current breaking times		times	50	
The main circuit resistance		μΩ	≤80(140)	
Rated operational voltage			≈220	
Mechanical life		times	10000	
The overcurrent regulating ☆		A	1~10	
Quick-break current ☆		A	6~20	
The delay time ☆		ms	40~850	
Remote control distance ☆		m	> 30	
Reclose time ☆		times	0~3	
Rated operating sequence ☆			O-0.3s-CO-180s-CO	
CT ※	Ratio	A	()/5	
	Capacity	VA	15	
The output voltage ※		A	AC220	
The output capacity ※		W	600	
The overcurrent regulating ※		A	1~10	
The delay time ※		ms	40~850	
Remote control distance ※		m	30	

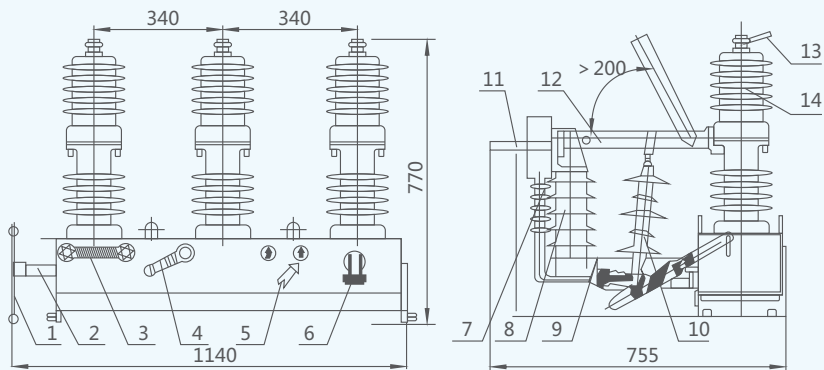
Note: not marked above is basic technical parameters; marked ☆ is intelligent technology parameter; marked ※ is the electronic PT type technical parameters.

ZW32-12 Type  
Outdoor High Voltage Vacuum Circuit Breaker

Outline and Mounting Dimensions



1. upper outlet 2. arc extinguish chamber 3. the insulating cylinder  
4. lower outlet 5. conductive clip 6. flexible connection  
7. insulated tension pole 8. the pressure spring of contact  
9. the opening spring 10. the drive connecting plate 11. the output shaft  
12. actuator 13. mechanism case 14. current transformer



1. operating handle 2. spindle of solation  
3. circuit breaker manual on-off handle 4. circuit breaker energy storage handle  
5. on-off instructions 6. connection plug 7. current transformer  
8. insulator 9. Isolation frame 10. insulated tension pole  
11. wiring board (inlet terminal) 12. isolation blade  
13. wiring board (outlet terminal) 14. circuit breaker