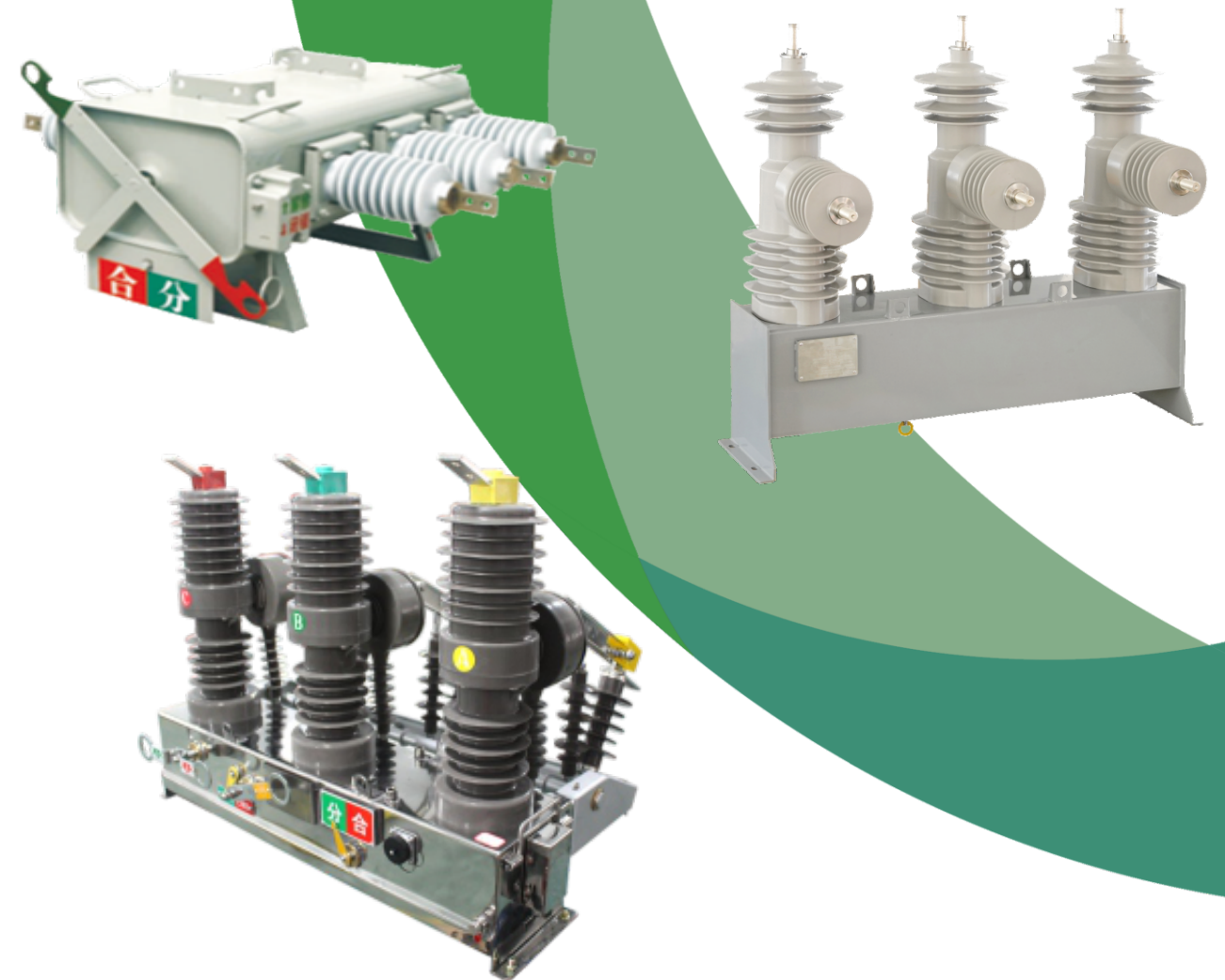


Pole-Mounted Switch



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Green Energy Electrical Industry Co., Ltd

Overview

The PGS-13.8/24/33 pole-mounted load switch is suitable for rated voltages of 13.8kV, 24kV, and 33kV, with rated current of 400A and 630A. It is designed for breaking and closing load current, overload current in power systems operating at 50/60Hz, automatically isolating faulty sections of distribution lines. The switch can be equipped with an intelligent microcomputer controller, allowing manual operation, electric operation, and remote monitoring and control.

The internal body uses high-purity (99.9%) SF₆ gas with excellent insulation and arc-extinguishing performance. It has an extremely short arc-extinguishing time (1/2 cycle wave) and good insulation recovery characteristics. The load current interruption has a short arc-extinguishing time, resulting in minimal contact consumption during interruption, eliminating the need for maintenance and replacement of interrupting parts.

The switch adopts a spring-stored energy operating mechanism with the main circuit's operating mechanism capable of completing disconnection or closing within 0.06 seconds, coordinating well with backup protection devices.

Maintains insulation performance and arc-extinguishing capability even at zero gauge pressure if SF₆ gas leakage reduces the internal gas pressure to zero gauge pressure.

Inlet and outlet line bushings use ceramic cable or terminal type for flexible selection.

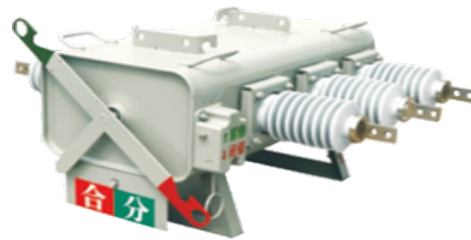
Features high-pressure explosion-proof pressure relief device to prevent the switch's casing from bursting due to a sudden increase in internal pressure during abnormal conditions.

Equipped with low-pressure interlock alarm device and manual interlock device.

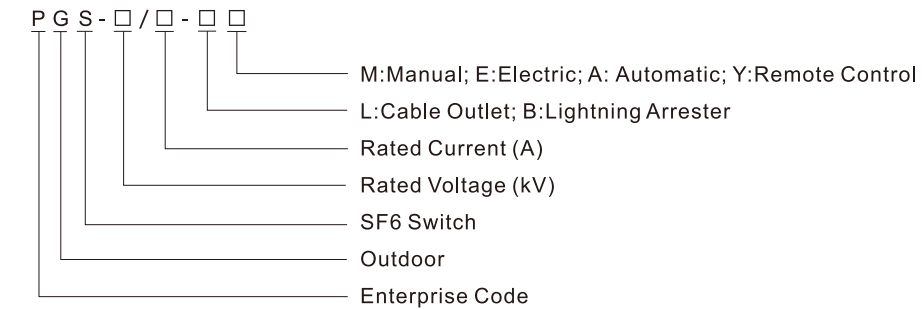
Built-in with three current transformers, a zero-sequence current transformer group, and six voltage sensors to collect distribution network operating parameters. Current transformer turns ratio of 600:1A or 1000:1A, with 0.5-level accuracy. Includes overcurrent protection to prevent overcurrent in the current measurement device. Voltage sensors on the power side (A, B, C) and load side (R, S, T), with a turns ratio of 5800V/0.4V, maintaining stable accuracy at 1.0%.

Ambient condition

Altitude: ≤2000m;
Wind Pressure: 700Pa;
Ice Thickness: 10mm;
Ambient Air Temperature: -40°C to +55°C;
Creepage Distance: 38mm/kV;
Installation site: no fire, explosion hazard, serious dirt, chemical corrosion, and severe vibration.



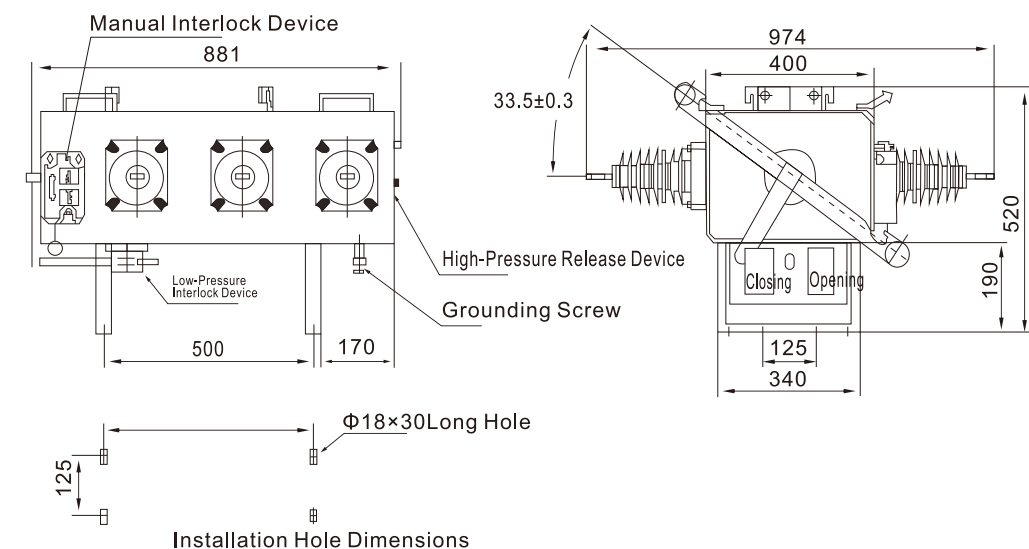
Model



Technical specification

Description		Unit	Vendor Values		
			13.8kV	24kV	33kV
Rated voltage		kV	13.8	24	33
Maximum operating voltage (nominal)		kV	17.5 (15.2)	27 (25.8)	38 (36)
Rated frequency		Hz	50/60		
Rated current		A	630		
Mainly active load current		A	630		
Rated peak with stand current		kA	50 (65)		
Duration of rated short circuit current		kA/s	20 (25) /2		
Rated short circuit making current (peak)		kA	50 (65)		
Mechanical life		time	10000		
Power frequency withstand voltage	Phase to earth/phase to phase	kV	50/60	60/70	70/80
BIL		kV	110/125	125/150	170/200
Protection class		IP	54		

Product Main Structure Diagram



Overview

The automatic circuit reclosers are designed for use on overhead distribution lines as well as distribution substation of voltage class up to 38kV.

The tanks are manufactured from stainless steel and powder coated in light grey colour. The product is equipped with a BC300 or BC500 controller. The microprocessor based controller, BC300 or BC500, combines all functions in a single cubicle, including protection, data logging, communication and so on. With built in communication methods, it is designed as a stand-alone device that can be easily integrated into distribution automation and remote control system.



- **Ganged Operation of Magnetic Actuator** The switchgear is operated by a single magnetic actuator ganged with the three vacuum interrupters for both tripping and closing.
- **Robust Epoxy Resin Housing** The vacuum interrupters are encapsulated with robust hydrophobic epoxy resin housing of unibody casting, featuring thorough insulation to ensure paramount dielectric characteristic.
- **Rugged Powder Coated Tank** The magnetic actuator and associated mechanism is enclosed in the rugged powder coated tank. The strong base with special surface finishing ensures the capability of working under various environmental conditions.
- The hydrophobic epoxy resin housings are firmly bolted to the lid.
- An external pointer, clearly visible on the base of tank, indicates the "open" or "closed" state of the switchgear.
- Red for "closed" and Green for "open" pulling the yellow ring with hot stick to manually latch the switchgear to "open"

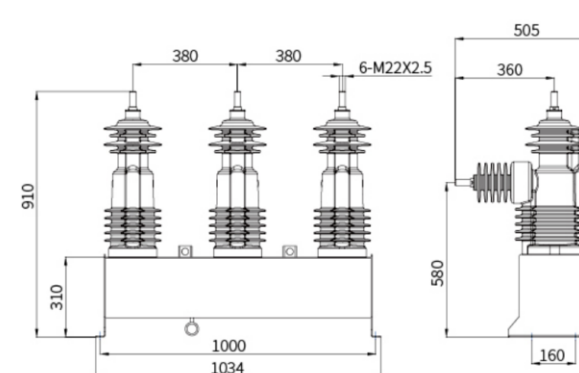
Ambient condition

Altitude: ≤4000m;
Wind Pressure: 700Pa;
Ice Thickness: 10mm;
Ambient Air Temperature: -40°C to +55°C;
Creepage Distance: 38mm/kV;
Installation site: no fire, explosion hazard, serious dirt, chemical corrosion, and severe vibration.

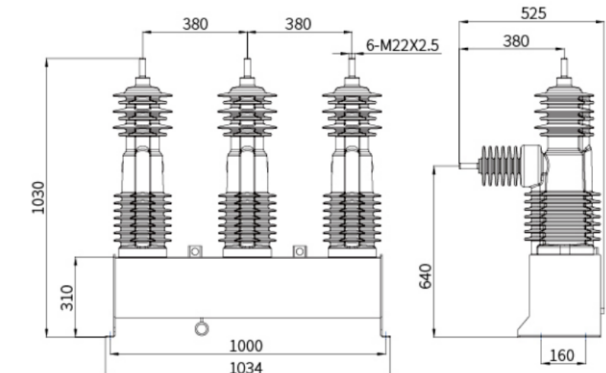
Technical specification

No.	Item	15kV	27kV	38kV
1	Installation	Outdoor, Pole and Substation Mounting		
2	Standard	IEC 62271-111 and IEEE C37.60		
3	Rated System Voltage	15kV	27kV	38kV
4	Rated Frequency	50/60Hz	50/60Hz	50/60Hz
5	Rated Continuous Current	630/800A	630/800A	630/800A
6	Rated Short-Circuit Breaking Current	12.5kA	12.5kA	16kA
7	Rated Short-Circuit Making Current	31.5kA	31.5kA	40kA
8	Short Time Current Withstand in 3 sec	12.5kA	12.5kA	16kA
9	Rated Lightning Impulse Withstand Voltage	110kV	125kV	170kV
10	Rated Short Duration P.F Withstand Voltage	50kV	60kV	70kV
11	Line Charging Current	2A	5A	5A
12	Cable Charging Current	10A	25A	40A
13	Reclosing Sequence	O - 0.2 s - CO - 2 s - CO - 2 s - CO - Lockout		
14	Closing Time	≤60ms	≤60ms	≤60ms
15	Opening Time	≤40ms	≤40ms	≤40ms
16	Number of Operations at Rated Current	15000times	15000times	15000times
17	Insulating Material of Poles	Hydrophobic Epoxy Resin		
18	Type of Operating Mechanism	Permanent Magnetic Actuator		
19	Creepage Distance	960mm	960mm	1290mm
20	Clearance, Phase to Phase	320mm	320mm	320mm
21	Minimum Clearance, Phase to Earth	270mm	270mm	350mm
22	Impedance between Connections	<50μΩ	<50μΩ	<50μΩ
23	Mass of Recloser Excluding Mounting Frame	140kg	140kg	155kg
24	Protection Class for Switch Unit & Control Unit	IP56	IP56	IP56
25	Wind Withstand Speed Up to	200km/h	200km/h	200km/h
26	Ambient Temperature	-40°C to +55°C	-40°C to +55°C	-40°C to +55°C
27	Altitude	<4000m	<4000m	<4000m

Product Main Structure Diagram

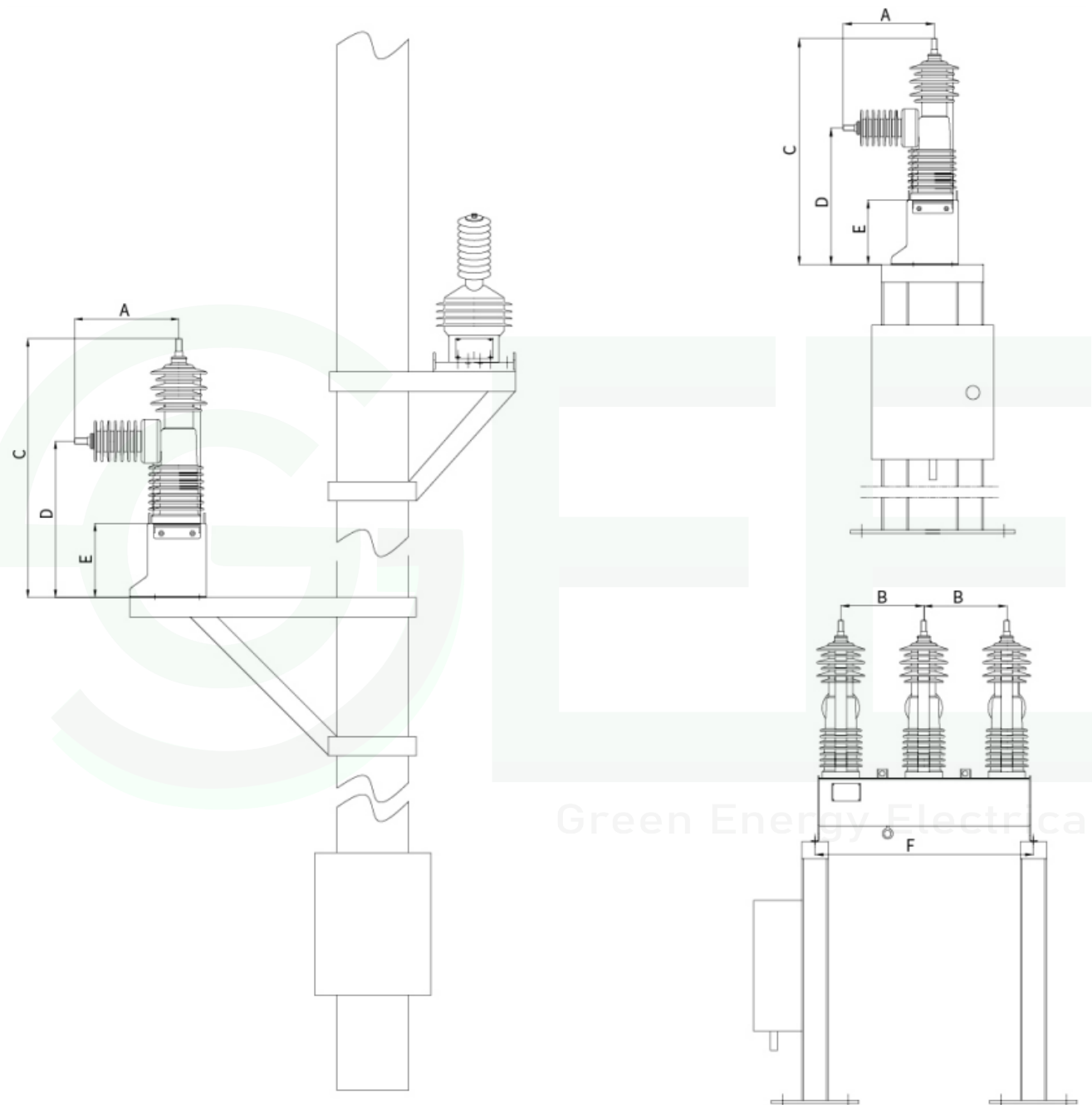


GACR-27



GACR-38

Dimensions for Mounting



		A	B	C	D	E	F
15kV	mm	360	380	910	580	310	1000
27kV	mm	360	380	910	580	310	1000
38kV	mm	380	380	1030	640	310	1000

Technical specification



On the front panel of BC300Pro

- 11 operation keys
- A USB port,
- 23 LED indicators,
- A 160*160 LCD.

BC300Pro is set on the panel. The user can set the constant value, parameters and other data of the device through the operation of keys. The device status can be observed through the LCD and LED lights.

LCD display

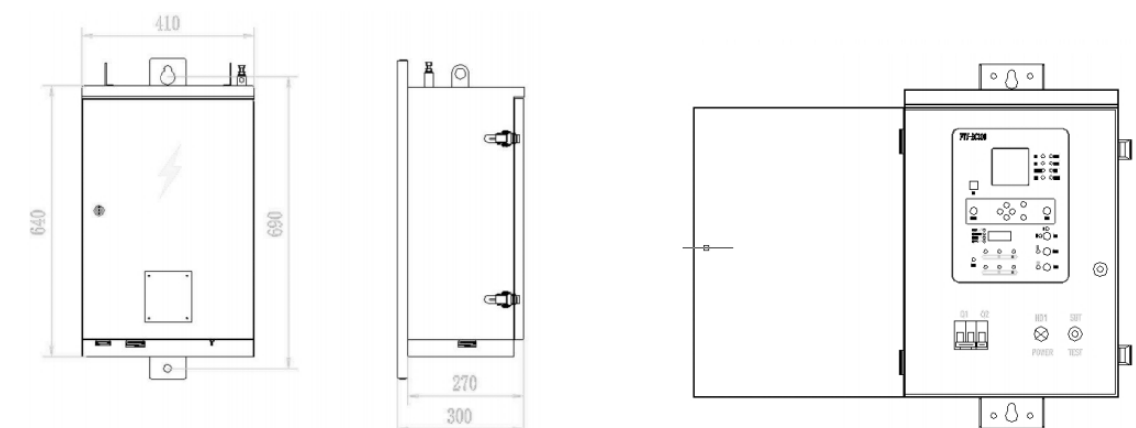
BC300Pro adopts liquid crystal display, which can display many information, such as:

- Single line diagram, including real-time positions of switches, disconnectors and grounding switches;
- Real time values of protection current and voltage;
- Equipment version, serial number, self inspection and other information
- Incident reporting (SOE)
- Various equipment parameters
- Various constant value parameters
- time

LED indication

BC300Pro device has 23 LED indicators, which can be used to indicate the operation status, protection action information, device alarm, communication status, remote and local, switch position, etc

Diagram



Overview

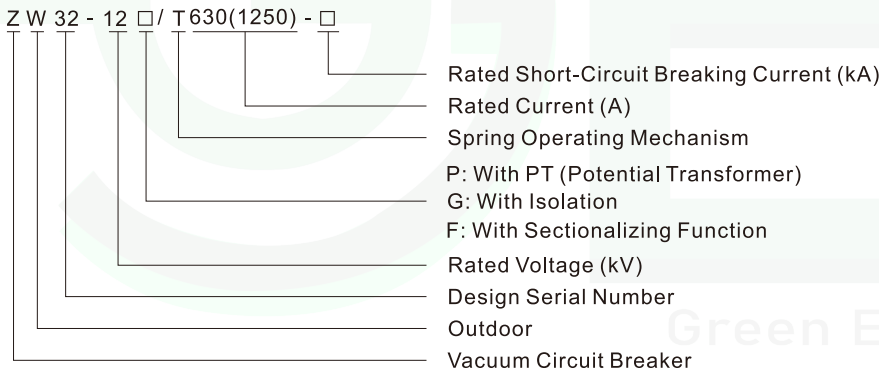
The ZW32-12□/T630(1250)-25 Primary and Secondary Fusion Vacuum Circuit Breaker (hereinafter referred to as the circuit breaker) is an outdoor distribution equipment with a rated voltage of 12kV and three-phase AC 50Hz. It is mainly used for breaking, closing, and handling load currents, overload currents, and short-circuit currents in power systems. It is suitable for protection and control in substations and industrial and mining distribution systems, as well as places with frequent operations in rural power grids. With the addition of a controller, it can achieve distribution network automation.



Ambient condition

Altitude: Up to 2000 meters
Ambient Air Temperature: -45°C to +70°C; Daily Temperature Difference: 30°C
Wind Speed: ≤35m/s
Suitable for places without flammable, explosive, chemically corrosive, and severe vibration hazards.

Model



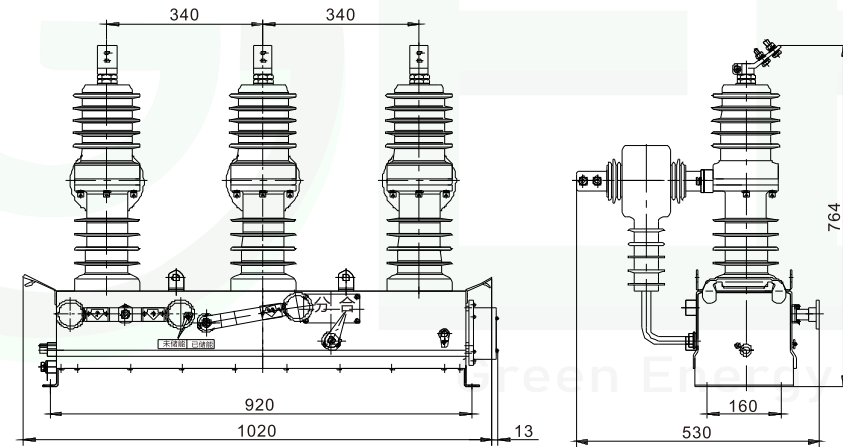
Compliance with Standards

- Gb1984 "AC High Voltage Vacuum Circuit Breaker"
- Gb11022 "General Technical Conditions for High Voltage Switchgear"
- GB311.1 "Insulation Coordination for High Voltage Transmission and Transformation Equipment"
- DL/TS93 "Common Ordering Technical Conditions for High Voltage Switchgear"
- DL/T402 "Ordering Technical Conditions for AC High Voltage Vacuum Circuit Breakers"
- Gb2706 "Methods of Dynamic and Thermal Stability Tests for AC High Voltage Apparatus"
- Gb3309 "Mechanical Tests on High Voltage Switchgear under Common Conditions"
- DI403 "Ordering Technical Conditions for 10-35kV Indoor High Voltage Vacuum Circuit Breakers"

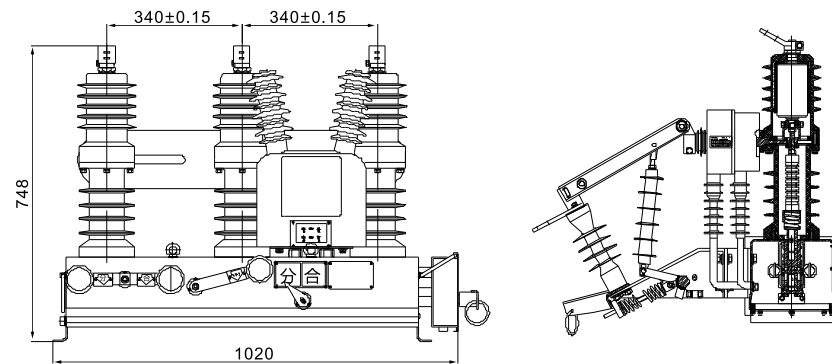
Technical specification

No.	Item	Unit	Data	
1	Rated Voltage	KV	12	
2	Rated Frequency	HZ	50	
3	Rated Current	A	630	1250
4	Rated Short-Circuit Breaking Current	KA	20	25
5	Rated Peak Withstand Current (Peak)	KA	50	63
6	Rated Short-Time Withstand Current	KA	20	25
7	Rated Short-Circuit Closing Current (Peak	KA	50	63
8	Mechanical Life	Times	10000	
9	Rated Short-Circuit Breaking Current Breaking Times	Times	30	
10	Power Frequency Withstand Voltage (1min): Wet/Dry, Phase-to-Phase/Phase-to-Ground	KV	30/42/48	
11	Lightning Impulse Withstand Voltage (Peak): Phase-to-Phase/Phase-to-Ground	KV	75/85	
12	Secondary Circuit 1min Power Frequency Withstand Voltage	KV	2	

Product Main Structure Diagram



ZW32-12 Structure and Installation Dimensions



- Technical Requirements
- 1.Unspecified tolerances are manufactured according to GB/T1804-2000-m level.
 - 2.Unspecified chamfers are 0.545°.

Overview

The ZW32-24 outdoor high-voltage vacuum circuit breaker is designed for a rated voltage of 24kV and operates at a frequency of 50Hz in three-phase AC. It serves as outdoor distribution equipment for power stations, industrial and mining enterprises, and rural power grids with frequent operations. It can also function as a ring network power supply unit and terminal equipment for the distribution, control, and protection of electrical equipment. When combined with an isolation switch, it can be used as a sectional switch. The breaker is primarily used for opening and closing load currents, overload currents, and short-circuit currents in power systems. It features a patented solid-sealed vacuum interrupter, external insulation with silicone rubber bushings for long life, high reliability, good weather resistance, easy transportation, and cost-effectiveness. The operating mechanism employs a compact, highly reliable spring operating mechanism with a simple structure and a mechanical life of up to 20,000 operations. If an advanced permanent magnet mechanism is used, mechanical performance is even more stable and reliable. The breaker can be equipped with a manual opening and closing mechanism and can be manually operated on-site when necessary. This breaker, when paired with a controller, becomes a recloser, enabling remote control, telemetry, remote signaling, and remote adjustment, known as the "four-remote" functions.



Standards

Gb1984 "AC High Voltage Circuit Breakers"
GB11022 "Common Technical Requirements for High-Voltage Switchgear and Control Equipment Standards"
GB311.1-6 "Insulation Coordination for High Voltage Transmission and Transformation Equipment"
GB763 "Heating of AC High Voltage Electrical Apparatus in Long-Term Operation"
GB2706 "Dynamic and Thermal Stability Test Methods for AC High Voltage Electrical Apparatus"
GB3309 "Mechanical Tests on High-Voltage Switchgear at Ambient Temperature"
DL/T593 "Common Ordering Technical Conditions for High-Voltage Switchgear"

Ambient condition

Altitude: Up to 2000m
Ambient Air Temperature: -40°C to +40°C
Wind Speed: ≤34m/s (equivalent to 700Pa on the cylindrical surface)
Pollution Level: TIV level
No frequent severe vibrations; seismic intensity not exceeding 8 degrees
No fire, explosion, or chemical corrosion in the vicinity.

Model

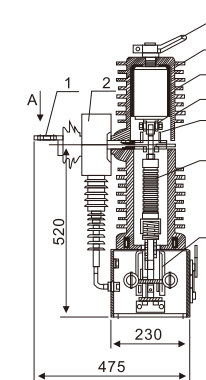
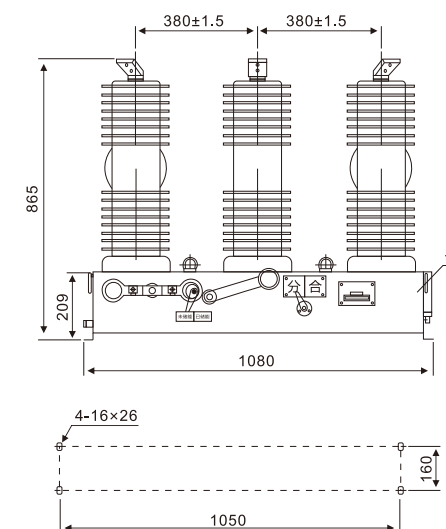
Z W 32-24G/ T630-20- □

S: Manual Operation D: Electric Operation
Rated Short-Circuit Breaking Current (kA)
Rated Current (A)
Spring Operating Mechanism
With Isolation
Rated Voltage (kV)
Design Serial Number
Outdoor
Vacuum Circuit Breaker

Technical specification

No.	Item	Unit	Data
1	Rated Voltage	kV	24
2	Rated Frequency	Hz	50
3	Rated Current	A	630
4	Rated Short-Circuit Breaking Current	kA	20
5	Rated Peak Withstand Current	kA	50
6	Rated Short-Time Withstand Current	kA	20
7	Rated Short-Circuit Closing Current (Peak)	kA	50
8	Mechanical Life	Times	10000
9	Rated Short-Circuit Breaking Current Breaking Times	Times	30
10	Power Frequency Withstand Voltage (1min): Dry (Between Phases, Phase to Ground/Opening)	kV	65/79
11	Lightning Impulse Withstand Voltage (Peak): Between Phases, Phase to Ground/Opening	kV	125/145
12	Power Frequency Withstand Voltage of Secondary Circuit (1min)	kV	2

Product Main Structure Diagram



1. Lower Outlet
 2. Current Transformer
 3. Upper Inlet
 4. Insulation Support
 5. Vacuum Interrupter Chamber
 6. Conduction Clip
 7. Flexible Connection
 8. Insulation Rod
 9. Operating Mechanism
 10. Enclosure
- 分□ Opening
合□ Closing

Overview

The ZW32-40.5(F) series outdoor high-voltage (permanent magnet, spring) vacuum circuit breaker utilizes a uniquely designed permanent magnet mechanism (or spring mechanism) and a highly reliable intelligent controller. This device is primarily used in high-voltage overhead line power grids for load current interruption, closing, overload current, and short-circuit current. It also features automatic reclosing for 0-3 cycles.

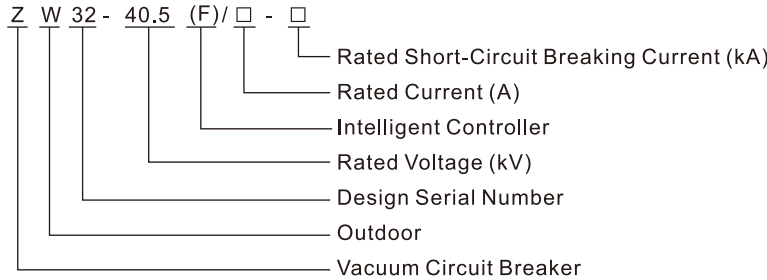
Main Features

- Extremely high reliability.
- Completely maintenance-free throughout its entire lifespan.
- High mechanical and electrical lifespan.
- Compact size and lightweight for easy installation.
- Standard relay protection and quick automatic reclosing function.

Ambient condition

- Altitude: Up to 2000m;
- Ambient Air Temperature: -30°C to +60°C;
- Wind Speed: ≤34m/s;
- Vibration or seismic activity from external sources on the switchgear and control equipment is negligible;
- Pollution Level: Level IV;
- Storage Temperature: -40°C to +85°C.

Model



Technical specification

No.	Item	Unit	Data
1	Rated Voltage	kV	40.5
2	Rated Current	A	1250/1600
3	Rated Frequency	Hz	50 or 60
4	Power Frequency Withstand Voltage 1min (Wet/Dry)	kV	80/95
5	Lightning Impulse Withstand Current (Peak)	kV	185
6	Rated Short-Circuit Breaking Current	kA	31.5
7	Rated Short-Circuit Closing Current (Peak)	kA	80
8	Rated Peak Withstand Current	kA	80
9	4S Short-Time Withstand Current	kA	31.5
10	Rated Operating Cycle		Open-0.1s-Close-open-3s- Close-open-6s- Close-open -60s Recovery
11	Rated Short-Circuit Breaking Current Opening Times	Times	30
12	Mechanical Lifespan	Times	20000
13	Permanent Magnet Mechanism Control Voltage	V	DC220
14	Secondary Circuit 1min Power Frequency Withstand Voltage	kV	2
15	Contact Opening Distance	mm	16±1
16	Contact Over-Travel	mm	4±0.5
17	Opening Speed	m/s	1.4-1.8
18	Closing Speed	m/s	0.4-0.8
19	Contact Closing Bounce Time	ms	≤5
20	Phase-to-Phase Center Distance	mm	560±2
21	Different Periods for Three-Phase Opening and Closing	ms	≤2
22	Resistance of Each Phase Conduction Loop	uΩ	< 120
23	Closing Time	ms	25~45
24	Opening Time	ms	20~45
25	Weight	Kg	295

Product Main Structure Diagram

