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CATALOGUE

MV switch directory



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About CNC

CNC was founded in 1988 specialized in Low-voltage electrical and Power Transmission and Distribution industries. We provide our customers with profitable growth by offering integrated comprehensive electrical solution.

CNC key value is innovation and quality to ensure clients with safe, reliable products. We set up advanced assembly line, test center, R&D Center and quality control center. We have got the certificates of is09001,IS014001, OHSAS18001 and CE, CB, SEMKO, KEMA, TUV etc.

As a leading manufacturer of electrical products in China, our business covers over 100 countries.

**DELIVER
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Factory workshop assembly line

The quality management of CNC strictly follows the principle of "human machine, material, method, and environment", which includes operating workers, equipment, raw materials, production processes, and the environment, ensuring the excellent performance of each element, in order to effectively improve product performance, lifespan, reliability, safety, and economy.





MV Product testing equipment



Lightning impulse voltage generator test device



Test Benchdevice



Power frequency withstand voltage test device

MV Circuit Breaker



MV Circuit Breaker

ZN63(VS1)-12 Indoor Vacuum Circuit Breaker (Insulation Cylinder)

- ZN63(VS1)-12 indoor AC MV vacuum circuit breaker is a three-phase AC 50HZ indoor switchgear with a rated voltage of 12KV. It can be used in industrial and mining enterprises, power plants and substations for the control and protection of electrical facilities, and is suitable for places with frequent operations.
- Standard: IEC 62271-100

General



MV Circuit Breaker

ZN63(VS1)-12 Indoor Vacuum Circuit Breaker (Insulation Cylinder)

Type designation

ZN63 - 12 T 630 - 25 HT P210

Model	Rated voltage(KV)	Operating mechanism	Rated current(A)	Rated short-circuit breaking current(KA)	Installation	Phase spacing
ZN63	12	T	630	25	HT	P210
Indoor vacuum circuit breaker	12:12KV	T: Spring type	630, 1250, 1600, 2000, 2500, 3150, 4000	20, 25, 31.5, 40	HT: Handcart FT: Fixed type	P150, P210, P275

Note:

ZN63-12 adopts a double spring integrated mechanism by default. If a single spring modular mechanism is required, a single spring needs to be added to the model backup;

Operating conditions

1. The ambient temperature is not higher than +40°C and not lower than -15°C (storage and transportation at -30°C are allowed);
2. The altitude is not higher than 1000m;
3. Relative temperature: the daily average is not more than 95%, and the monthly average value is not more than 90%, the daily average value of saturated vapor pressure is not more than 2.2×10^{-3} MPa, and the monthly average value is not more than 1.8×10 MPa;
4. The seismic intensity does not exceed 8 degrees;
5. There is no fire, explosion hazard, serious pollution, places subject to chemical corrosion and severe vibration.

Features

1. The arc extinguishing chamber and operating mechanism of the circuit breaker are arranged in a front-to-back configuration and connected as a whole through a transmission mechanism.
2. The insulating cylinder is formed using the APG (Automatic Pressure Gelation) new process.
3. Inner skirts and reinforcing ribs are added to the insulating cylinder, which enhances the insulation level and the ability to withstand dynamic stable currents.
4. The vacuum arc extinguishing chamber is installed inside the insulating cylinder, effectively preventing damage and surface contamination caused by foreign objects, while reducing the overall size of the circuit breaker.
5. The operating mechanism adopts a spring-stored energy design, providing both electric and manual energy storage functions.
6. An advanced and rational buffer device ensures that there is no rebound during disconnection, reducing disconnection impact and vibration.
7. No adjustment needed and has minimal maintenance or maintenance-free operation.
8. The mechanical lifespan can reach up to 20,000 operations

MV Circuit Breaker

ZN63(VS1)-12 Indoor Vacuum Circuit Breaker (Insulation Cylinder)

Technical data

Technical data are shown in Table 1

Item	Unit	Value		
Rated voltage	kV	12		
Rated insulation level		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	31.5	40
Rated thermal stable current (effective value)	KA	20	31.5	40
Rated dynamic stable current (peak value)		20	80	100
Rated short-circuit making current (peak value)		50	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 of the circuit breaker are shown in Table 2

Item	Unit	Value	
Contact distance	mm	11±1(Solid-sealing 9±1)	
Contact travel		3.3±0.6	
Average closing speed (6mm~contact closed)	m/s	0.6±0.2	
Average opening speed (contact separation -6mm)		1.2±0.2	
Opening time (rated voltage)	m/s	20~50	
Closing time (rated voltage)		35~70	
Contact closing bounce time	m/s	≤2	≤3(40kA)
Three phase opening asynchrony		≤2	
Allowable cumulative thickness of wear for moving and stationary contacts	mm	3	
Main electrical circuit resistance	μΩ	≤50(630A) ≤35(1600~2000A)	≤45(1250A) ≤25(2500A and above)
Contact pressure of closing contacts	N	2000±200(20kA) 3100±200(31.5kA)	2400±200(25kA) 4500±250(40kA)

The opening and closing coil parameters are shown in Table 3

Item	Closing coil	Opening coil	Note
Rated operating voltage(V)	AC110/220,DC110/220	AC110/220,DC110/220	The opening coil shall not open when it is less than 30% of the rated operating voltage
Coil power(W)	245	245	
Normal operating voltage range	85% -110% rated voltage	65% -120% rated voltage	

Energy storage motor parameters are shown in Table 4

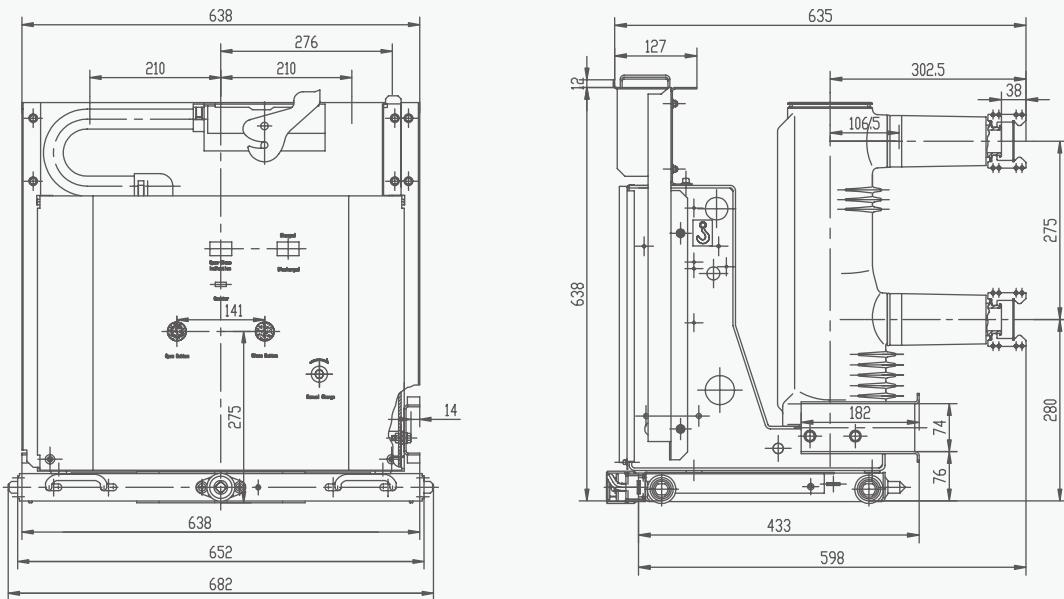
Model	Rated voltage	Rated input power	Normal operating voltage range	Energy storage time at rated voltage
ZYJ55-1	DC110	70	85% -110% rated voltage	≤15
	DC220			

MV Circuit Breaker

ZN63(VS1)-12 Indoor Vacuum Circuit Breaker (Insulation Cylinder)

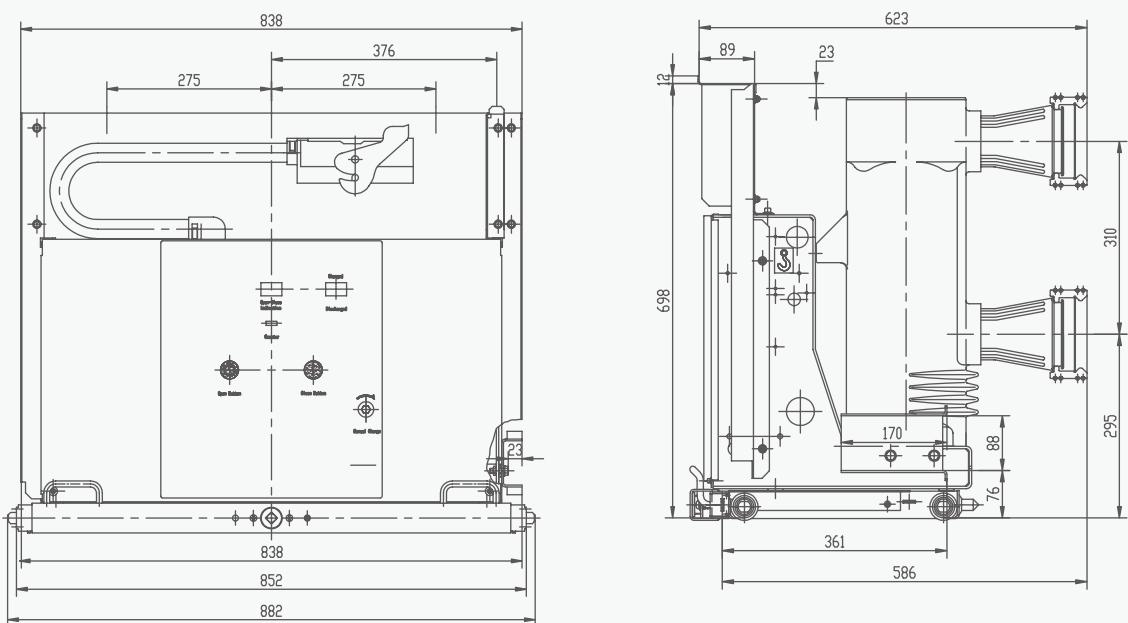
Overall and mounting dimensions(mm)

Figure 1: Handcart type ZN63 (VS1) circuit breaker suitable for 800mm cabinet width overall dimensions



Rated current (A)	630	1250	1600
Rated short-circuit breaking current(KA)	20,25,31.5	25,31.5,40	31.5,40
Matching static contact dimensions(mm)	Φ35	Φ49	Φ55

Figure 3: Handcart type ZN63A (VS1) circuit breaker suitable for 1000mm cabinet width overall dimensions



Rated current (A)	1600	2000	2500	3150	4000
Rated short-circuit breaking current(KA)	31.5,40		31.5, 40		40
Matching static contact dimensions(mm)	Φ79		Φ109		

MV Circuit Breaker

ZN63(VS1)-12 Indoor Vacuum Circuit Breaker (Insulation Cylinder)

Figure 2: Fixed type ZN63A (VS1) circuit breaker suitable for 800mm cabinet width overall dimensions

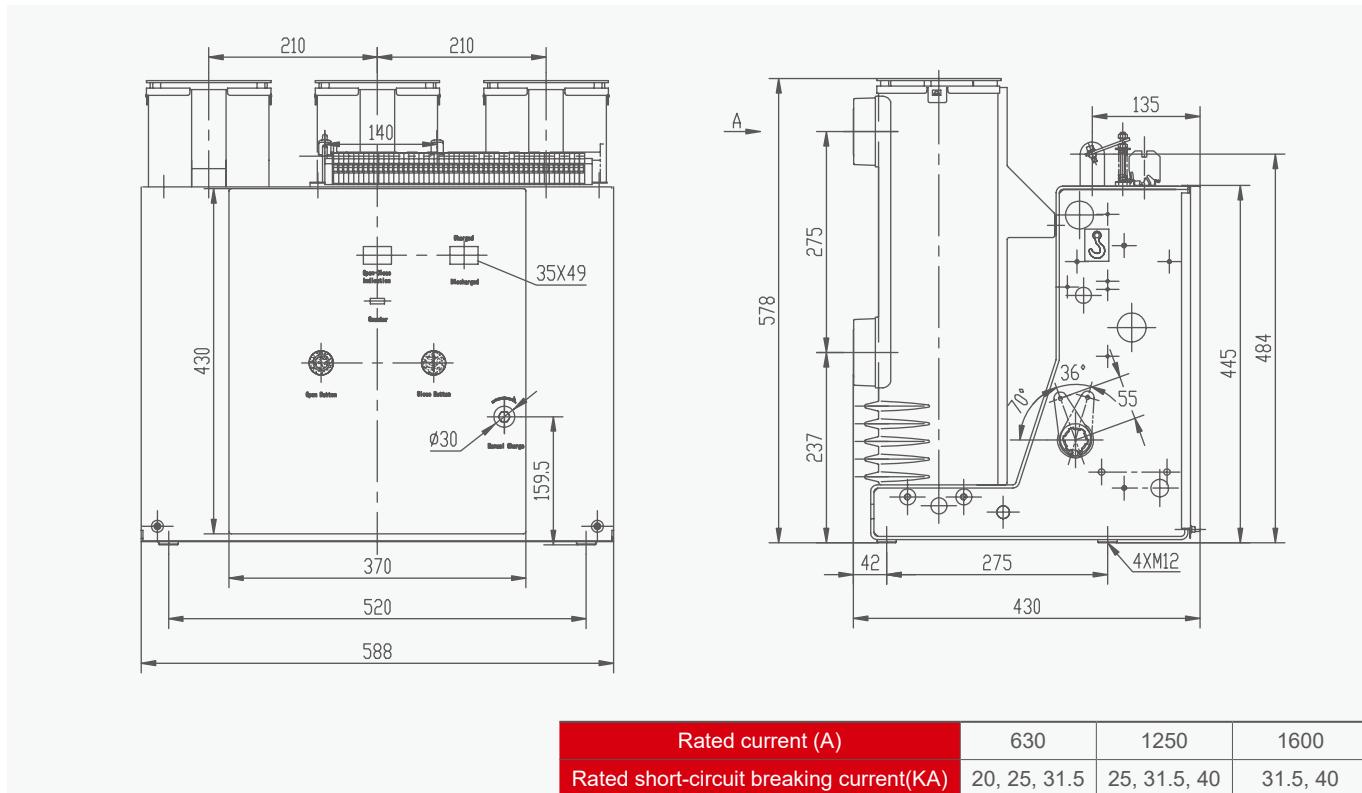
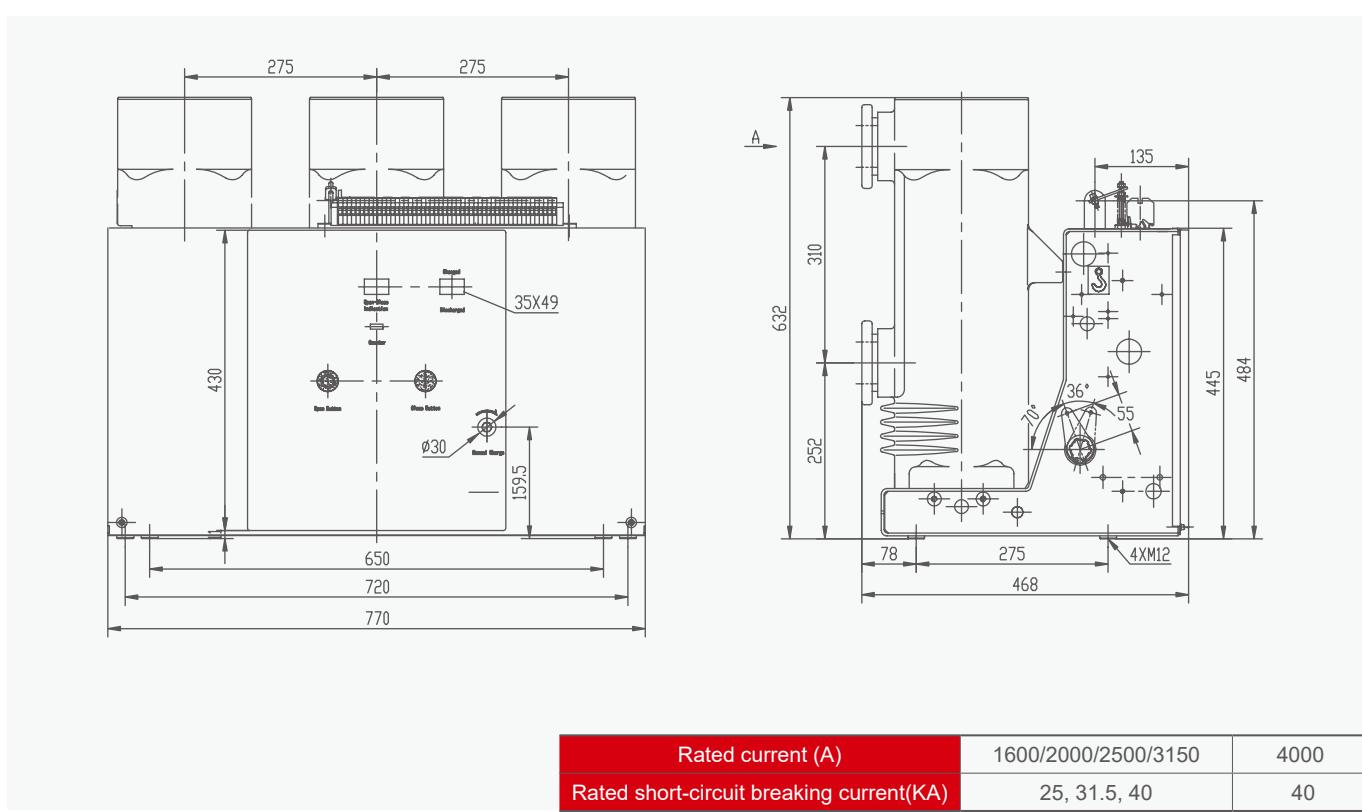


Figure 4: Fixed type ZN63A (VS1) circuit breaker suitable for 1000mm cabinet width overall dimensions



MV Circuit Breaker

ZN63(VS1)-12P Indoor Vacuum Circuit Breaker (Solid Sealed)

- ZN63(VS1)-12P indoor AC MV vacuum circuit breaker is a three-phase AC 50HZ indoor switchgear with a rated voltage of 12KV. It can be used in industrial and mining enterprises, power plants and substations for the control and protection of electrical facilities, and is suitable for places with frequent operations.
- Standard: IEC 62271-100

General



MV Circuit Breaker

ZN63(VS1)-12P Indoor Vacuum Circuit Breaker (Solid Sealed)

Type designation

ZN63 - 12 P T 630 - 25 HT P210

Model	Rated voltage(KV)	Pole type	Operating mechanism	Rated current(A)	Rated short-circuit breaking current(KA)	Installation	Phase spacing
ZN63	12	P	T	630	25	HT	P210
Indoor vacuum circuit breaker	12:12KV	P: Solid-sealing type	T: Spring type	630, 1250, 1600, 2000, 2500, 3150, 4000	20, 25, 31.5, 40	HT: Handcart FT: Fixed type	P150, P210, P275

Note:

ZN63(VS1)-12P adopts a double spring integrated mechanism by default. If a single spring modular mechanism is required, a single spring needs to be added to the model backup;

Operating conditions

1. The ambient temperature is not higher than +40°C and not lower than -15°C (storage and transportation at -30°C are allowed);
2. The altitude is not higher than 1000m;
3. Relative temperature: the daily average is not more than 95%, and the monthly average value is not more than 90%, the daily average value of saturated vapor pressure is not more than 2.2×10^{-3} MPa, and the monthly average value is not more than 1.8×10^{-3} MPa;
4. The seismic intensity does not exceed 8 degrees;
5. There is no fire, explosion hazard, serious pollution, places subject to chemical corrosion and severe vibration.

Features

1. The arc extinguishing chamber and operating mechanism of the circuit breaker are arranged in a front-to-back configuration and connected as a whole through a transmission mechanism.
2. The hermetically sealed pole adopts epoxy resin insulation material to seal the vacuum arc extinguishing chamber and the main circuit conductive components as a whole.
3. The vacuum arc extinguishing chamber utilizes a hermetically sealed pole, enhancing the product's ability to withstand environmental pollution.
4. The operating mechanism adopts a spring-stored energy design, providing both electric and manual energy storage functions.
5. It features an advanced and rational buffer device, ensuring no rebound during disconnection and reducing disconnection impact and vibration.
6. It has advantages such as simple assembly, high insulation strength, high reliability, good product consistency, and maintenance-free operation.
7. The mechanical lifespan can reach up to 20,000 operations.

MV Circuit Breaker

ZN63(VS1)-12P Indoor Vacuum Circuit Breaker (Solid Sealed)

Technical data

Technical data are shown in Table 1

Item	Unit	Value		
Rated voltage	kV	12		
Rated insulation level		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)		63	80	100
Rated short-circuit making current (peak value)		50 63	80	100
Rated short-circuit breaking current breaking times	Times	80	50	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 of the circuit breaker are shown in Table 2

Item	Unit	Value	
Contact distance	mm	11±1	
Contact travel		3.3±0.6	
Average closing speed (6mm~contact closed)	m/s	0.6±0.2	
Average opening speed (contact separation -6mm)		1.2±0.2	
Opening time (rated voltage)	m/s	20~50	
Closing time (rated voltage)		35~70	
Contact closing bounce time	m/s	≤2	≤3(40kA)
Three phase opening asynchrony		≤2	
Allowable cumulative thickness of wear for moving and stationary contacts	mm	3	
Main electrical circuit resistance	μΩ	≤50(630A) ≤35(1600~2000A)	≤45(1250A) ≤25(2500A and above)
Contact pressure of closing contacts	N	2000±200(20kA) 3100±200(31.5kA)	2400±200(25kA) 4500±250(40kA)

The opening and closing coil parameters are shown in Table 3

Item	Closing coil	Opening coil	Note
Rated operating voltage(V)	AC110/220,DC110/220	AC110/220,DC110/220	The opening coil shall not open when it is less than 30% of the rated operating voltage
Coil power(W)	245	245	
Normal operating voltage range	85% -110% rated voltage	65% -120% rated voltage	

Energy storage motor parameters are shown in Table 4

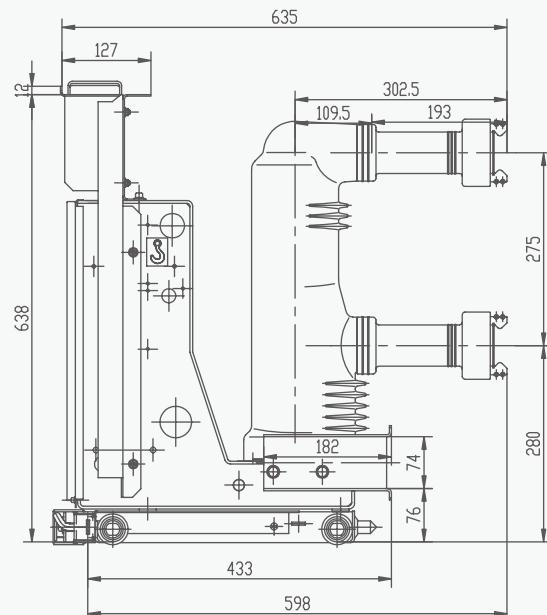
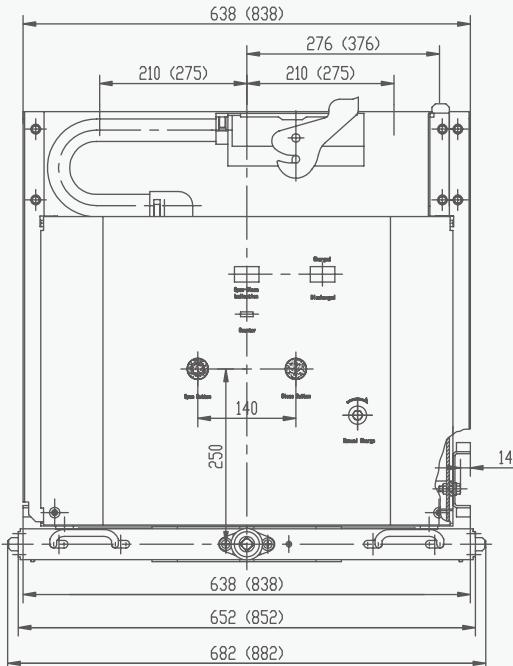
Model	Rated voltage	Rated input power	Normal operating voltage range	Energy storage time at rated voltage
ZYJ55-1	DC110	70	85% -110% rated voltage	≤15
	DC220			

MV Circuit Breaker

ZN63(VS1)-12P Indoor Vacuum Circuit Breaker (Solid Sealed)

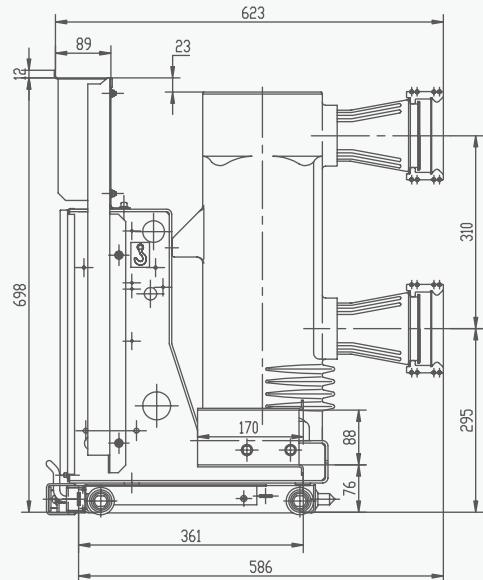
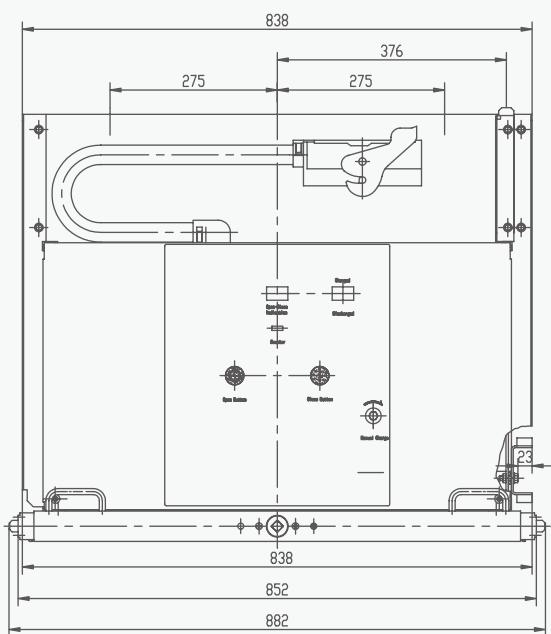
Overall and mounting dimensions(mm)

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



Rated current (A)	630	1250	1600
Rated short-circuit breaking current(KA)	20, 25, 31.5	25, 31.5, 40	31.5, 40
Equipped static contact size (mm)	Φ35	Φ49	Φ55

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

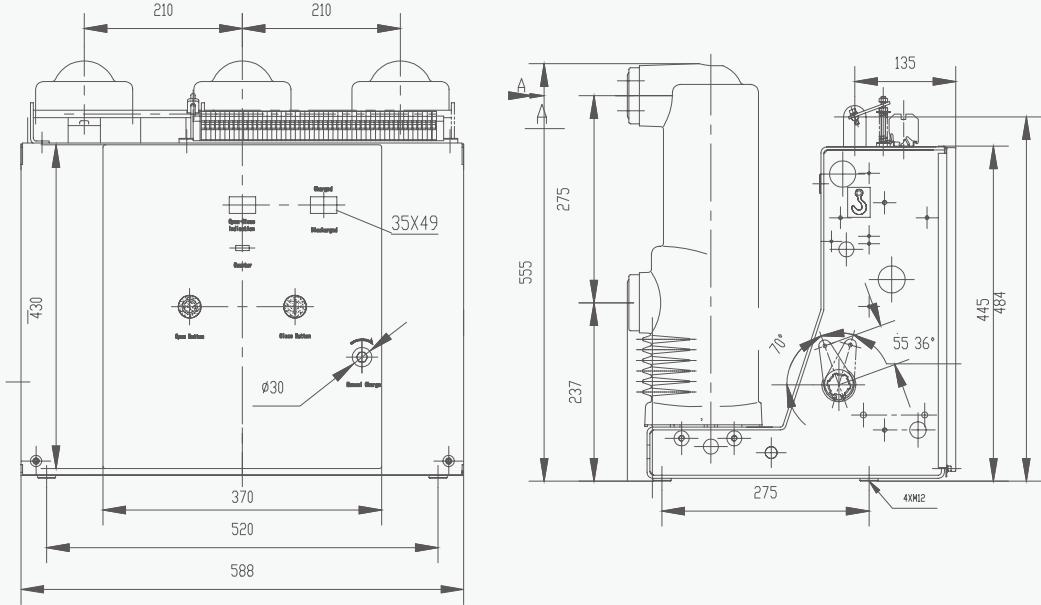


Rated current (A)	1600	2000	2500	3150	4000
Rated short-circuit breaking current(KA)	31.5, 40		31.5, 40		40
Equipped static contact size (mm)	Φ79		Φ109		

MV Circuit Breaker

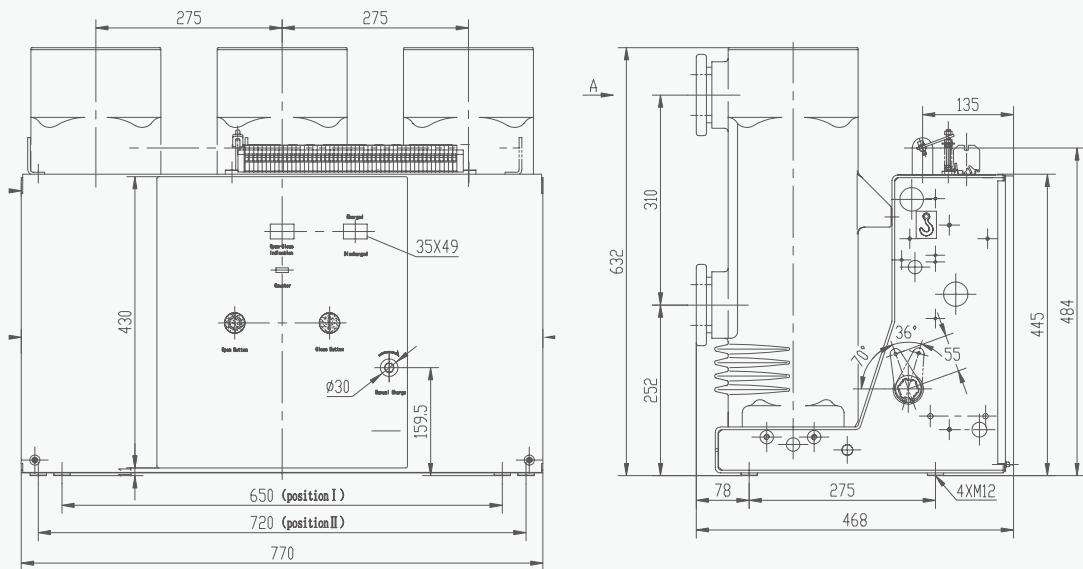
ZN63(VS1)-12P Indoor Vacuum Circuit Breaker (Solid Sealed)

Fixed outline size drawing (for 800mm cabinet)



Rated current (A)	630	1250	1600
Rated short-circuit breaking current(KA)	20, 25, 31.5	25, 31.5, 40	31.5, 40

Fixed outline size drawing (applicable to 1000mm cabinet)



Rated current (A)	1600	2000	2500	3150	4000
Rated short-circuit breaking current(KA)	31.5, 40		31.5, 40		40

MV Circuit Breaker

ZN63C(VS1C)-12/24 Indoor Side Mounted Vacuum Circuit Breaker

- ⦿ ZN63C(VS1C)-12/24 series indoor AC MV vacuum circuit breaker (hereinafter referred to as circuit breaker) is an indoor switchgear with three-phase AC 50Hz and rated voltage of 12/24kV, which can be used for the control and protection of electrical facilities in industrial and mining enterprises, power plants and substations. It is suitable for places with frequent operations.
- ⦿ The circuit breaker adopts an integrated design of the operating mechanism and the circuit breaker body, and is used as a fixed installation unit.
- ⦿ Standard: IEC 62271-100

General



MV Circuit Breaker

ZN63C(VS1C)-12/24 Indoor Side Mounted Vacuum Circuit Breaker

Type designation

ZN63 C - 12 P / T 630 - 25 F R P210

Model	Structure	Rated voltage(KV)	Pole type	Operating mechanism	
ZN63	C	12	P	/	
Indoor vacuum circuit breaker	Side operation	12:12KV 24:24KV	No mark: Insulating cylinder type P: Solid-sealing type		T: Spring type
Rated current(A)	Rated short-circuit breaking current(KA)		Installation	Main circuit wiring direction	Phase spacing
630	25		F	R	P210
630, 1250	20, 31.5		F: Fixed type	L: Left R: Right	P210, P275

Operating conditions

1. The ambient temperature is not higher than +40°C and not lower than -15°C (storage and transportation at -30°C are allowed);
2. The altitude is not higher than 1000m;
3. Relative temperature: the daily average is not more than 95%, and the monthly average is not more than 90%, the daily average value of saturated vapor pressure is not more than 2.2×10^{-3} MPa, and the monthly average value is not more than 1.8×10 MPa;
4. The seismic intensity does not exceed 8 degrees;
5. There is no fire, explosion hazard, serious pollution, places subject to chemical corrosion and severe vibration.

Features

1. The arc extinguishing chamber and operating mechanism of the circuit breaker are arranged in a front-to-back configuration and connected as a whole through a transmission mechanism.
2. Depending on the design of the switchgear, the primary conductive output can be divided into right output and left output.
3. The main conductive circuit is primarily designed with an insulating cylinder, but it can also be designed with a fixed-sealing pole method.
4. The operating mechanism adopts a spring energy storage type and has both electric and manual energy storage functions.
5. It features an advanced and rational buffering device, ensuring no rebound during circuit interruption and reducing the impact and vibration during circuit breaking.
6. It requires minimal or no adjustments and requires very little maintenance or is maintenance-free.
7. The mechanical lifespan can reach 20,000 cycles.

MV Circuit Breaker

ZN63C(VS1C)-12/24 Indoor Side Mounted Vacuum Circuit Breaker

Technical data

Technical data are shown in Table 1

Item	Unit	Value			
Rated voltage	kV	12		24	
Rated insulation level		75		125	
1min power frequency withstand voltage		42		65	
Rated current	A	630,1250	630,1250	630,1250	630,1250
Rated short circuit breaking current(KA)	KA	25	31.5	25	31.5
Rated thermal stable current (effective value)	KA	25	31.5	25	31.5
Rated dynamic stable current (peak value)		63	80	63	80
Rated short-circuit making current (peak value)		63	80	63	80
Rated short-circuit breaking current breaking times	Times	50			
Secondary circuit power frequency withstand current	V	2000			
Rated operating sequence	/	Opening -0.3s - closing and opening -180s - closing and opening			
Rated thermal stability time	s	4			
Rated single/back to back capacitor bank breaking current	A	630/400			
Mechanical life	Times	20000		10000	

The mechanical characteristic parameters of the circuit breaker are shown in Table 2

Item	Unit	Value
Contact distance	mm	11±1,9±1(Solid sealing type)
Contact travel		3.5±1
Average closing speed (6mm~contact closed)	m/s	0.4~0.8
Average opening speed (contact separation -6mm)		0.9~1.3
Opening time (rated voltage)	m/s	20~50
Closing time (rated voltage)		35~70
Contact closing bounce time	m/s	≤2
Three phase opening asynchrony		≤2
Allowable cumulative thickness of wear for moving and stationary contacts	mm	3
Main electrical circuit resistance	μΩ	≤(630A), ≤45(1250A)
Contact pressure of closing contacts	N	2400±200(KA), 3100±200(31.5KA)

The opening and closing coil parameters are shown in Table 3

Item	Closing coil	Opening coil	Note
Rated operating voltage(V)	AC110/220,DC110/220	AC110/220,DC110/220	The opening coil shall not open when it is less than 30% of the rated operating voltage
Coil power(W)	264	264	
Normal operating voltage range	85% -110% rated voltage	65% -120% rated voltage	

Energy storage motor parameters are shown in Table 4

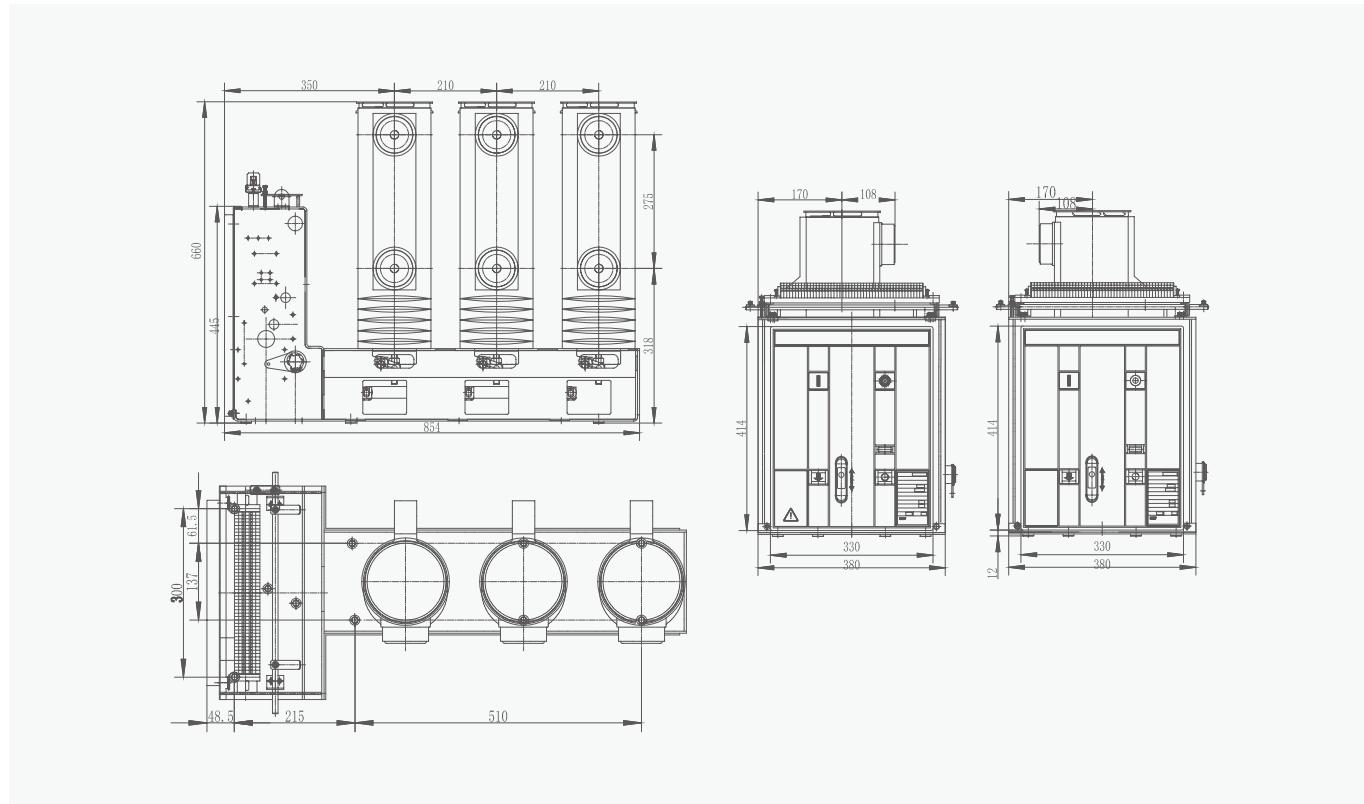
Model	Rated voltage	Rated input power	Normal operating voltage range	Energy storage time at rated voltage
ZYJ55-1	DC110	50~70	85% -110% rated voltage	≤15
	DC220			

MV Circuit Breaker

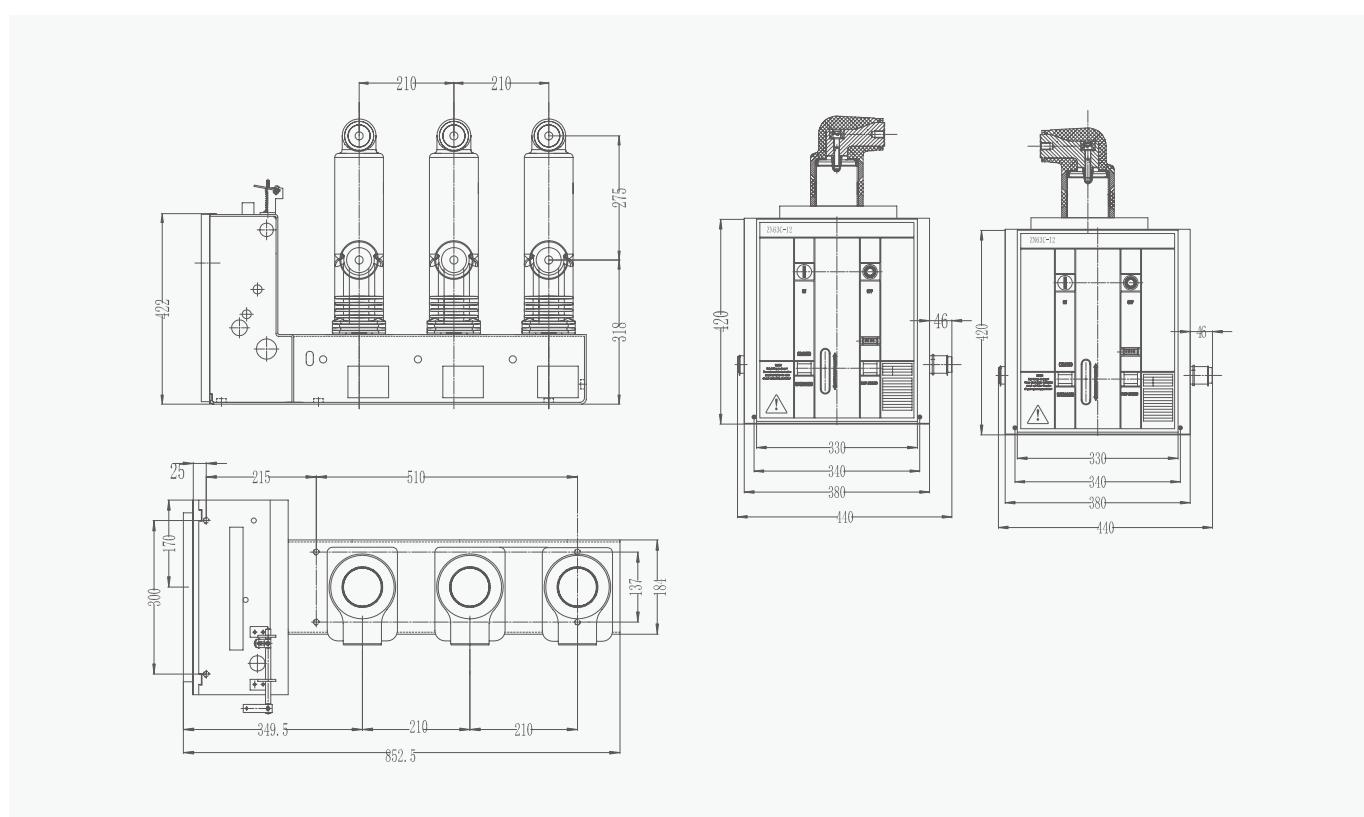
ZN63C(VS1C)-12/24 Indoor Side Mounted Vacuum Circuit Breaker

Overall and mounting dimensions(mm)

ZN63C(VS1C)-12 Fixed outline size drawing (insulation cylinder)



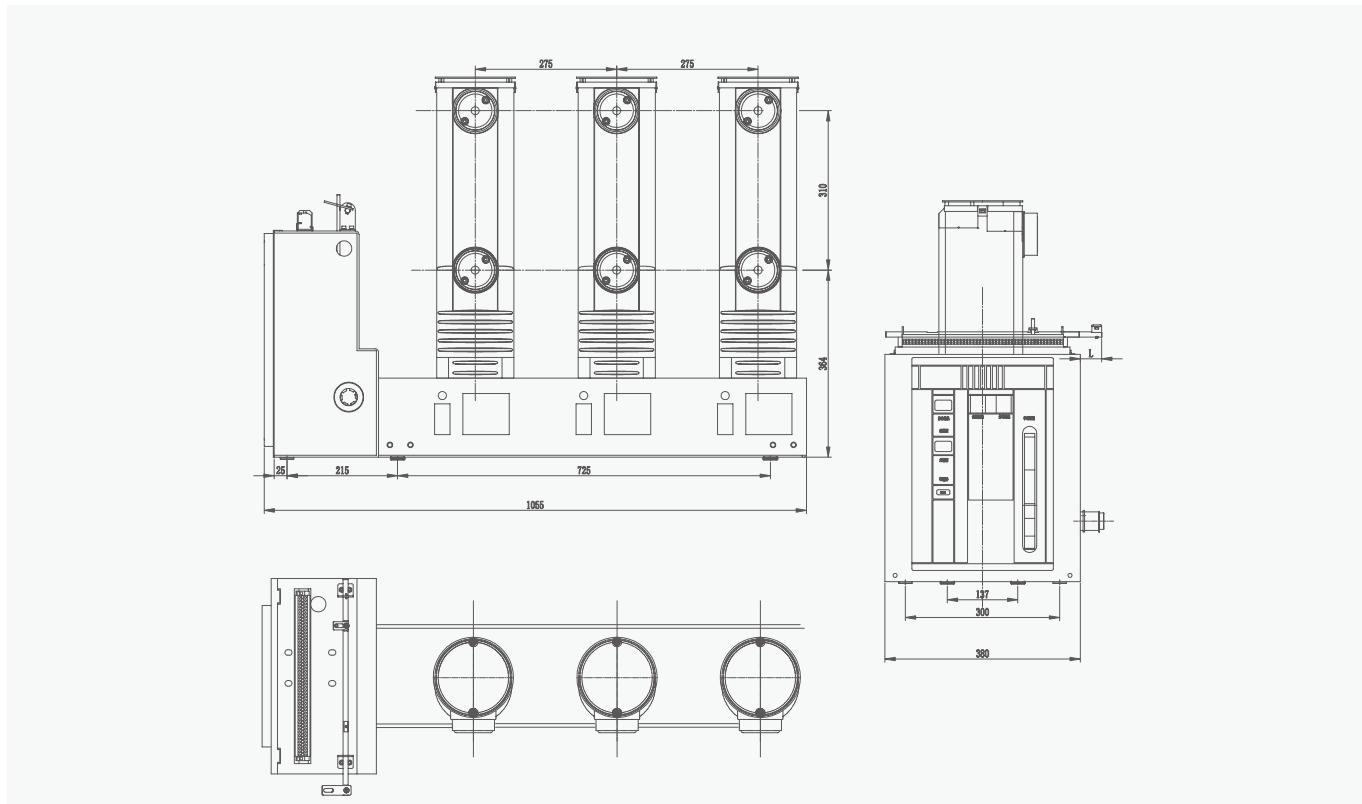
ZN63C(VS1C)-12P Solid seal type outline dimension drawing (insulation cylinder)



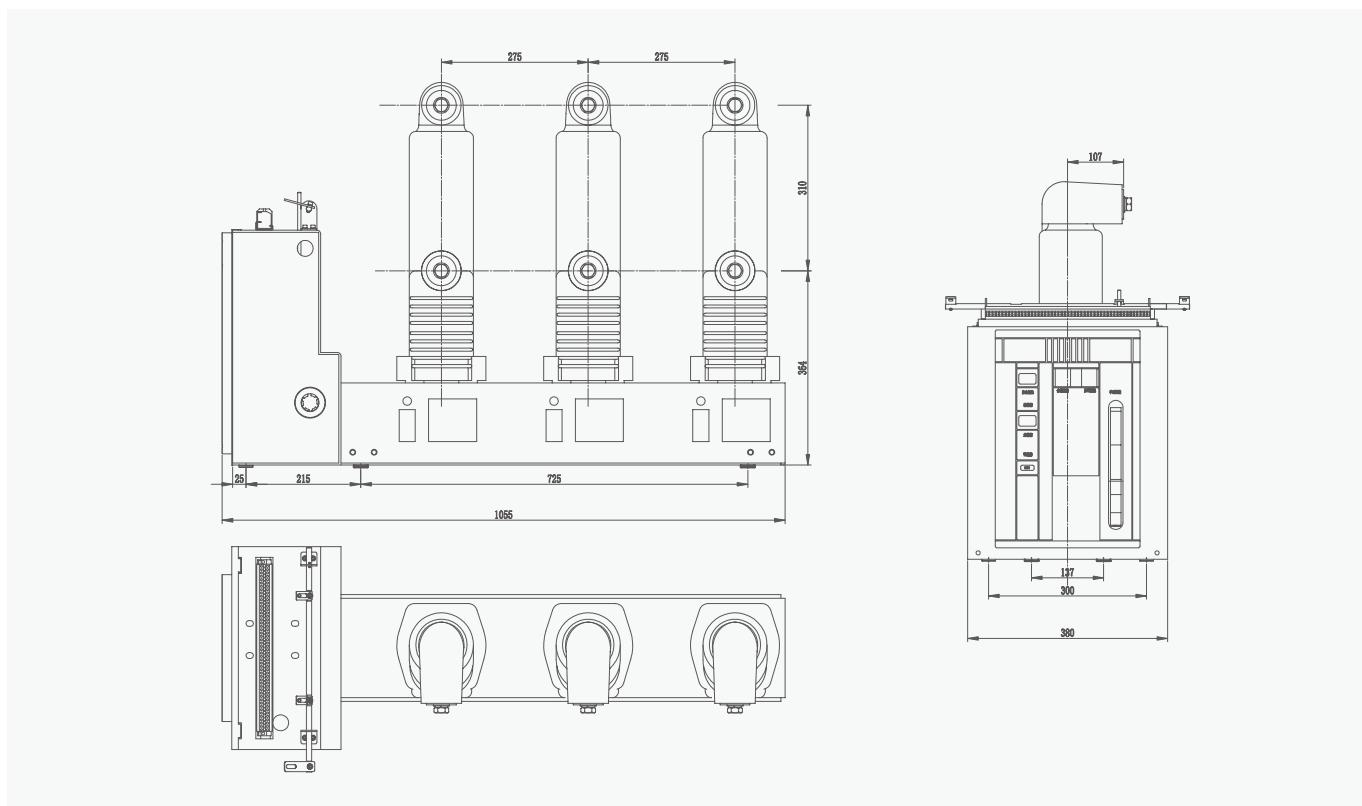
MV Circuit Breaker

ZN63C(VS1C)-12/24 Indoor Side Mounted Vacuum Circuit Breaker

ZN63C(VS1C)-24 Fixed outline size drawing (insulation cylinder)



ZN63C(VS1C)-24P Solid seal type outline dimension drawing (insulation cylinder)



MV Circuit Breaker

ZN63M(VCM1)-12 Indoor Permanent Magnet Vacuum Circuit Breaker

- The ZN63M(VCM1)-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



MV Circuit Breaker

ZN63M(VCM1)-12 Indoor Permanent Magnet Vacuum Circuit Breaker

Type designation

ZN63M - 12 P M 630 - 25 HT P210

Model	Rated voltage(KV)	Pole type	Operating mechanism	Rated current(A)	Rated short-circuit breaking current(KA)	Installation	Phase spacing
ZN63M	12	P	M	630	25	HT	P210
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

1. Ambient temperature: upper limit +40°C; lower limit -25°C.
2. Altitude: altitude not higher than 1000m.
3. 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.
4. Earthquake intensity: less than 8.
5. 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

1. 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.
2. The operating mechanism employs a permanent magnet mechanism and has functions for electrically closing and opening the circuit as well as manually emergency tripping.
3. The permanent magnet mechanism adopts a dual stable state form, characterized by intelligence, high reliability, long lifespan, and maintenance-free operation.
4. 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.
5. The control circuit module exhibits high reliability and can withstand harsh conditions such as lightning strikes and surges during operation.
6. The energy storage module adopts capacitor energy storage, characterized by short energy storage time and long lifespan.
7. The mechanical lifespan is not less than 20,000 cycles.

MV Circuit Breaker

ZN63M(VCM1)-12 Indoor Permanent Magnet Vacuum Circuit Breaker

Technical data

Technical data are shown in Table 1

Item	Unit	Value		
Rated voltage	kV	12		
Rated insulation level		75		
1min power frequency withstand voltage		42		
Rated current	A	630,1250	1250, 1600, 2000, 2500, 3150, 4000	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	50	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 of the circuit breaker are shown in Table 2

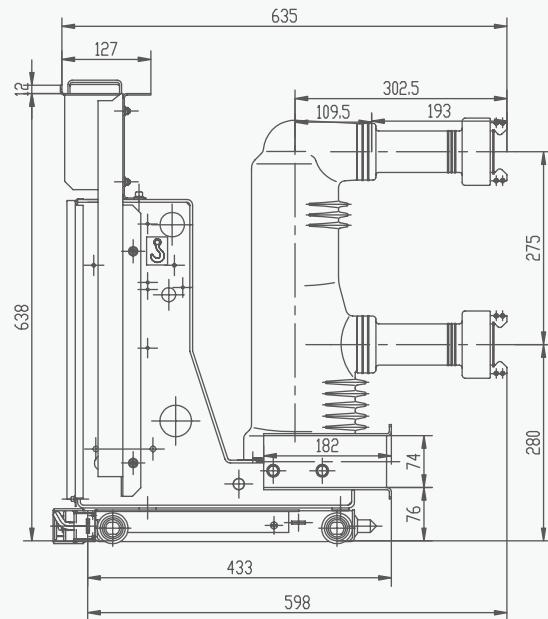
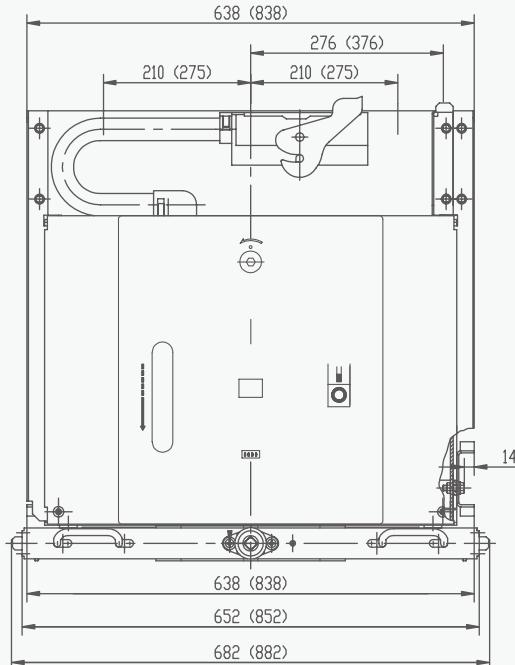
Item	Unit	Value
Contact distance	mm	111±1(Solid-sealing 9±1)
Contact travel	mm	3.0±0.5
Closing speed	m/s	0.6±0.2
Opening speed	m/s	1.0±0.2
Contact closing bounce time	ms	≤2
Three phase closing and opening asynchrony	ms	≤2
Closing time	ms	20≤t≤75
Opening time	ms	13≤t≤65
Permanent magnet drive power supply 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)

MV Circuit Breaker

ZN63M(VCM1)-12 Indoor Permanent Magnet Vacuum Circuit Breaker

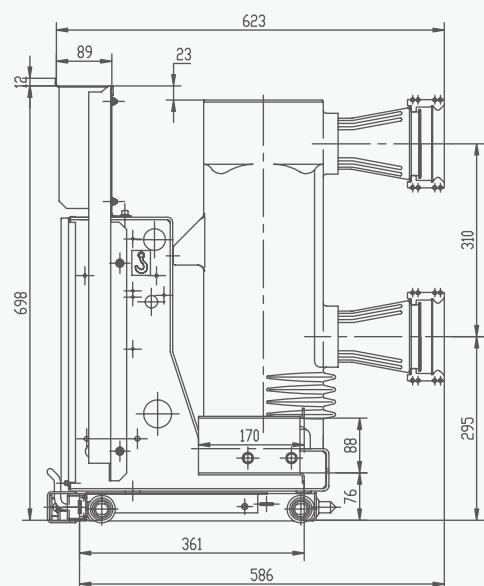
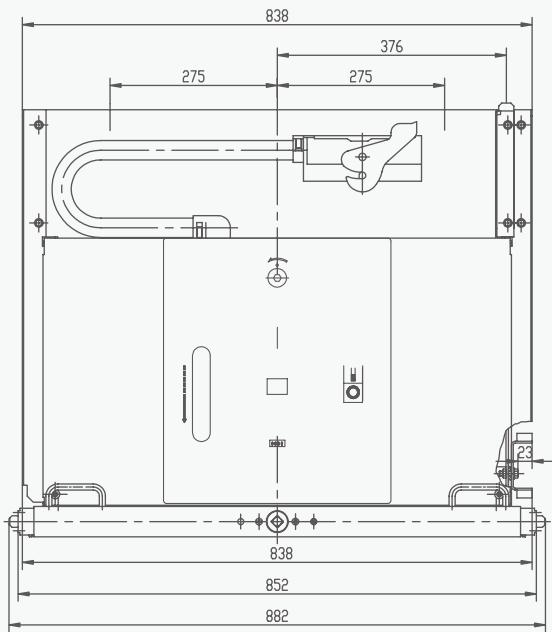
Overall and mounting dimensions(mm)

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



Rated current (A)	630	1250	1600
Rated short-circuit breaking current(KA)	20, 25, 31.5	25, 31.5, 40	31.5, 40
Equipped static contact size (mm)	Φ35	Φ49	Φ55

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

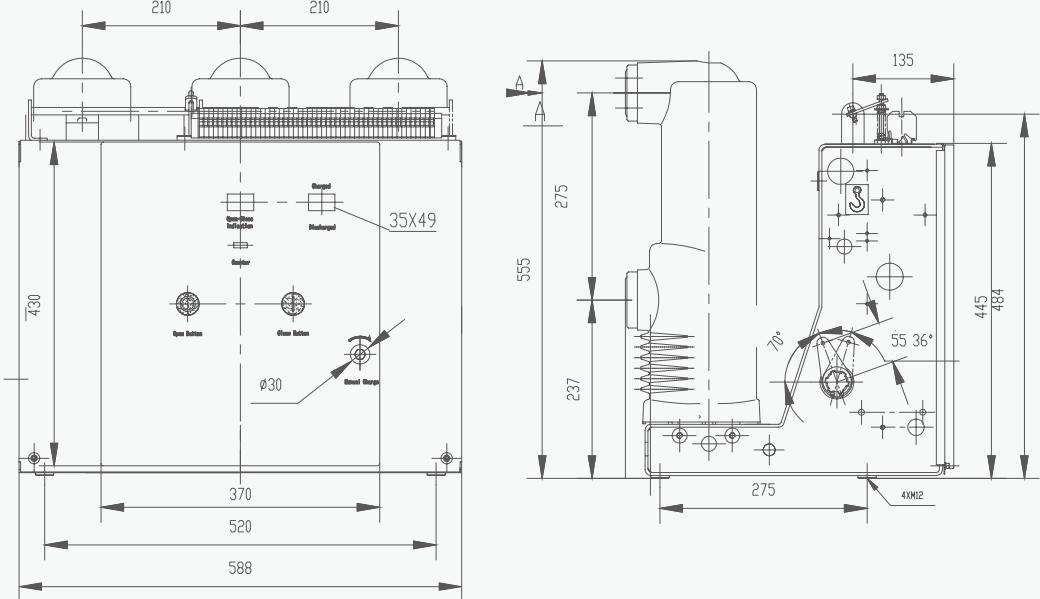


Rated current (A)	1600	2000	2500	3150	4000
Rated short-circuit breaking current(KA)	31.5, 40		31.5, 40		40
Equipped static contact size (mm)	Φ79		Φ109		

MV Circuit Breaker

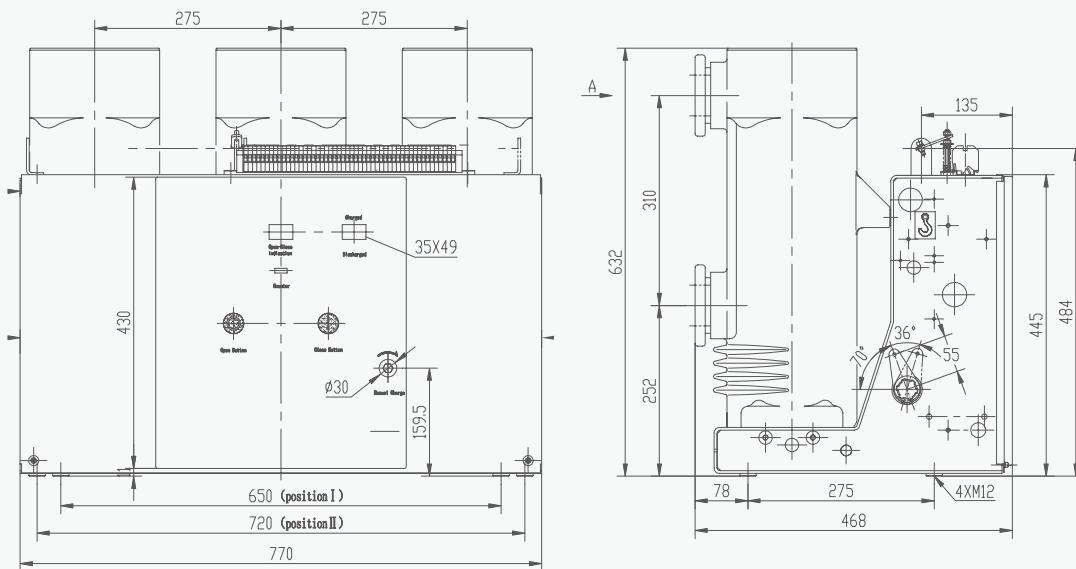
ZN63M(VCM1)-12 Indoor Permanent Magnet Vacuum Circuit Breaker

Fixed outline size drawing (for 800mm cabinet)



Rated current (A)	630	1250	1600
Rated short-circuit breaking current(KA)	20, 25, 31.5	25, 31.5, 40	31.5, 40

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



Rated current (A)	1600	2000	2500	3150	4000
Rated short-circuit breaking current(KA)	31.5, 40		31.5, 40		40

MV Circuit Breaker

ZN63(VS1)-24 Indoor Vacuum Circuit Breaker

- ZN63(VS1)-24 series indoor AC MV vacuum circuit breaker is an indoor switchgear for three-phase AC 50Hz, rated voltage 4KV power system. The market combines years of professional production experience to develop and design a new generation of vacuum circuit breakers.
- Standard: IEC 62271-100

General



MV Circuit Breaker

ZN63(VS1)-24 Indoor Vacuum Circuit Breaker

Type designation

ZN63 - 24 P / T 630 - 25 HT P210

Model	Rated voltage(KV)	Pole type	Operating mechanism	Rated current(A)	Rated short-circuit breaking current(KA)	Installation	Phase spacing
ZN63	24	P	T	630	25	HT	P210
Indoor vacuum circuit breaker	23:24KV	No mark: Insulating cylinder type P: Solid-sealing type	T: Spring type	630, 1250, 1600, 2000, 2500, 3150, 4000	20, 25, 31.5, 40	HT: Handcart FT: Fixed type	P210, P275

Note:

Zn63 (S) adopts a double spring integral mechanism by default. If a single spring modular mechanism is required, a single spring needs to be added to the model backup;

Operating conditions

1. Altitude: 1000m and below;
2. Environmental temperature: upper limit+40 °C, lower limit -25 °C;
3. Relative humidity: daily average relative humidity not exceeding 95%, monthly average relative humidity not exceeding 90%, saturated vapor pressure: daily average not exceeding 2.2×10 MPa, monthly average not greater than 1.8×10 Mpa.
4. Seismic intensity not exceeding 8 degrees;
5. A place free from flammable, explosive, or chemically corrosive substances and intense vibrations.

Features

1. The adoption of a new generation modular spring operating mechanism, which features a compact, simple, well-designed structure, reliable transmission, and easy installation.
2. Integration of the operating mechanism and circuit breaker body: it can be used as a fixed installation unit or combined with a dedicated propulsion mechanism to form a handcart unit.
3. The main power circuit primarily utilizes a solid-sealed pole, and an insulation simplification method can also be selected.
4. The main circuit incorporates a solid insulation structure with an integrated solid-sealed pole, achieving maintenance-free, high reliability, and compact size.
5. The circuit breaker is an E2 grade breaker.
6. The cabinet is equipped with comprehensive five-protection interlocking functions.

MV Circuit Breaker

ZN63(VS1)-24 Indoor Vacuum Circuit Breaker

Technical data

Technical data are shown in Table 1

Item	Unit	Value				
Rated voltage	kv	24				
Rated frequency	Hz	50				
Rated current	A	630, 1250	1250, 1600, 2000, 2500 3150			
Rated insulation level	kv	65				
		79				
		125				
		145				
4s rated short time withstand current	kA	20	25	31.5		
Rated short circuit breaking current		20	25	31.5		
Rated peak withstand current		50	63	80		
Rated short circuit main current		50	63	80		
Rated short-circuit duration	S	4				
Rated breaking current at the fault of different phases earthed	kA	17.4	21.7	27.4		
Rated operation sequence		0-0.3s-CO-180s-CO				
Rated operation voltage	V	DC(AC)220/110				
Electrical endurance		E2 (grade)*				
Endurance endurance	Time	25000				

Note:

1. When the rated current is 3150A, forced air cooling is required
2. The GB1984-2003 electrical life B2 standard is implemented, and the number of short-circuit current interruptions is 274 times.

MV Circuit Breaker

ZN63(VS1)-24 Indoor Vacuum Circuit Breaker

The mechanical characteristic parameters of the circuit breaker are shown in Table 2

Item	Unit	Value						
Opening distance of contact	mm	13±1						
Over-travel distance of contact		4±1						
Central distance between poles		210,275						
Permissible abrasion thickness of the contact	m/s	3						
Average opening speed (6mm just opening)		1.3±0.3						
Average closing speed	ms	0.6±0.2						
Jumping time after contact closed.		≤2						
Asynchrony of three phase closing, opening		≤2						
	Rated current	A	630	1250	1600	2000	2500	3150
Main circuit resistance	Fixed type breaker	μΩ	≤50	≤45	≤35	≤35	≤30	≤25
	Truck type breaker		≤55	≤50	≤50	≤40	≤35	≤30
Opening time	ms	≤50						
Closing time		≤75						
Operating performances of operating mechanism	85%~110%(rated voltage)	Reliably close						
	85%~110%(rated voltage)	Reliably open						
	≤30%(rated voltage)	Not open						

Main technical data of operating mechanism as sheet 3

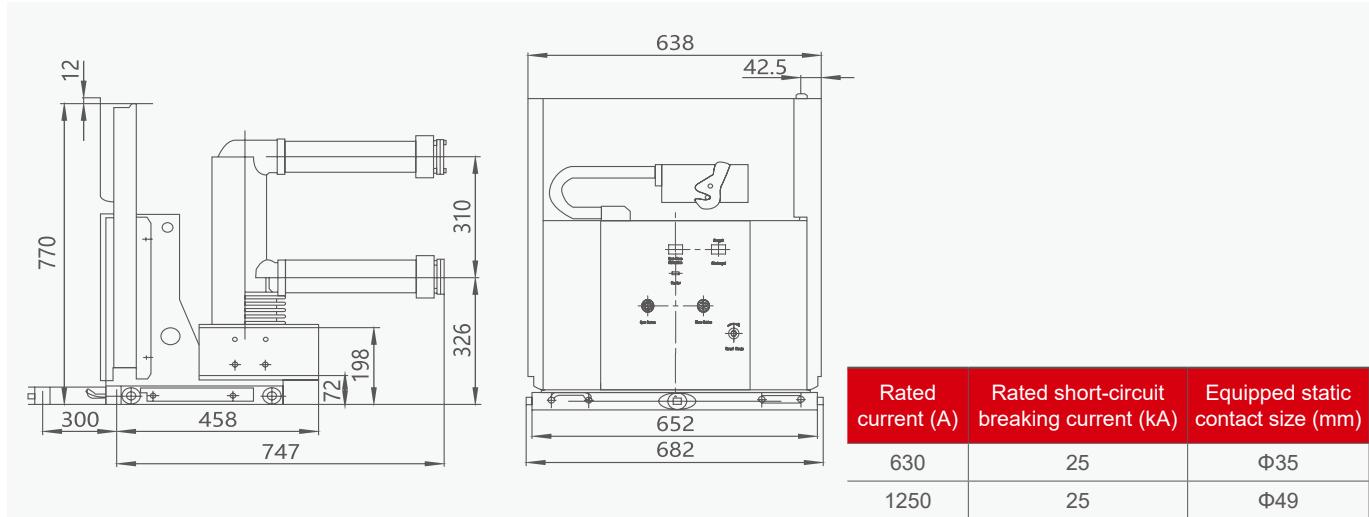
Item	Unit	Value	
Rated operating voltage for opening	V	AC/DC220V, AC/DC110V	
Rated operating voltage for closing		AC/DC220V, AC/DC110V	
Rated instantaneous over-current tripping current	A	5/3.5	
Rated voltage for charging motor	V	AC/DC220V, AC/DC110V	
Rated output power of charging motor	W	70	
Charging time	S	≤10	
1min p.f withstand voltage on secondary circuit	V	2000	

MV Circuit Breaker

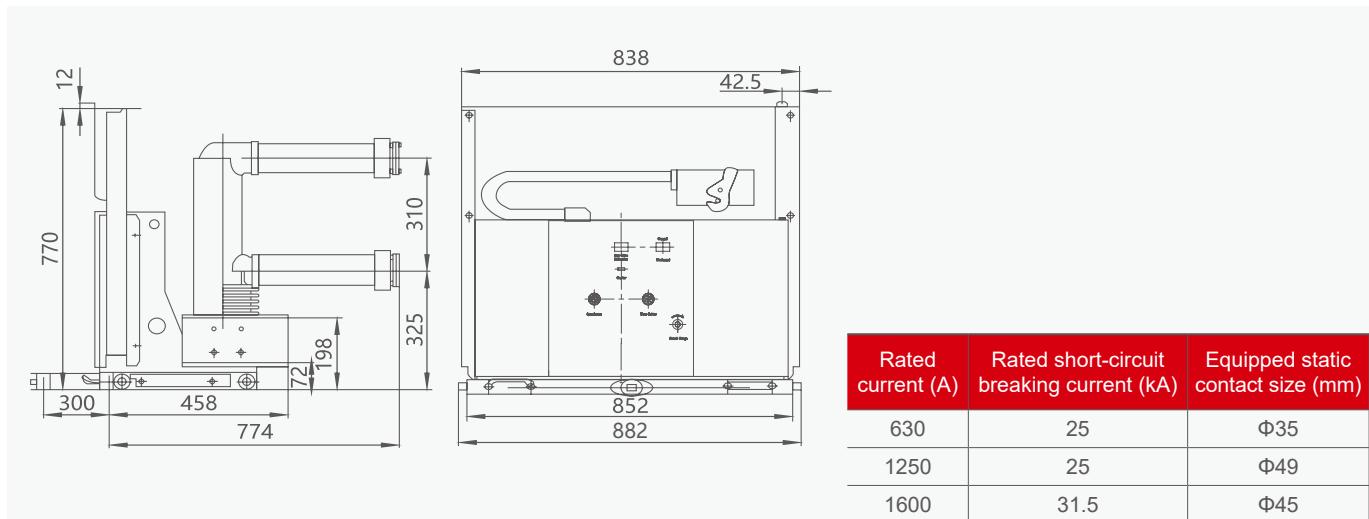
ZN63(VS1)-24 Indoor Vacuum Circuit Breaker

Overall and mounting dimensions(mm)

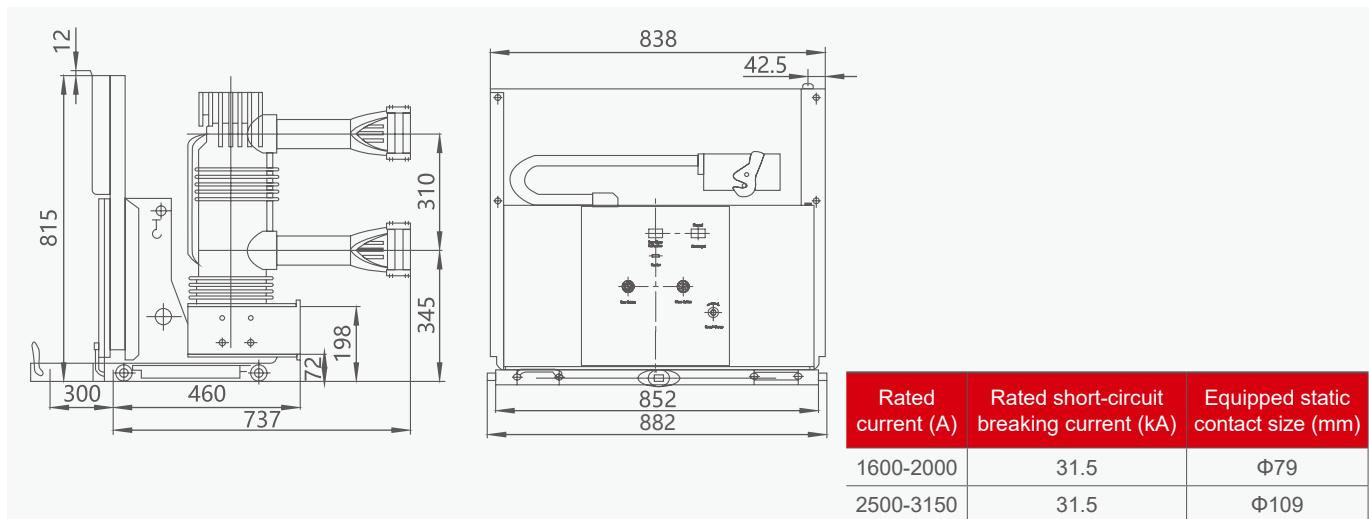
ZN63(VS1)-24 hand car phase distance 210 outline dimensions (small solid sealed pole type)



ZN63(VS1)-24 hand car phase distance 275 outline dimensions (small solid sealed pole type)



ZN63(VS1)-24 hand car phase distance 275 outline dimensions (big solid sealed pole type)



MV Circuit Breaker

VYF-12GD Indoor Three Position Vacuum Circuit Breaker

- The YVF-12GD series three-position combined vacuum circuit breaker adopts a modular framework structure, integrating vacuum circuit breaker, isolation switch, grounding switch, interlocking mechanism, and operating mechanism, with excellent electrical and mechanical performance.
- Mainly used in three-phase AC 50HZ power systems with a rated voltage of 3.6KV-12KV, for control and protection purposes in industrial and mining enterprises, power plants, and substations. It is a new generation of high-performance miniaturized medium voltage electrical products.
- Standard: IEC 62271-100

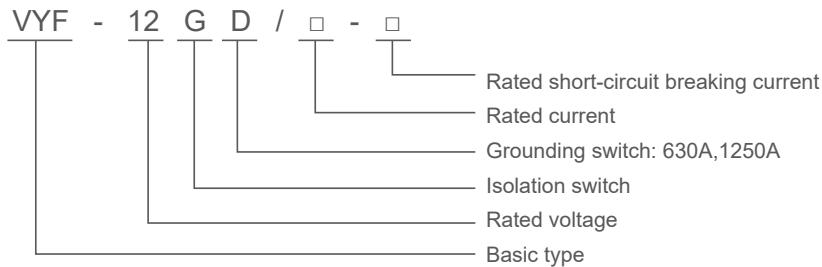
General



MV Circuit Breaker

VYF-12GD Indoor Three Position Vacuum Circuit Breaker

Type designation



Note:

If there is no grounding switch, the grounding operation shaft acts as an interlocking shaft, and the external dimensions remain unchanged.

Operating conditions

1. Ambient temperature: -25°C +40°C;
2. Relative humidity: daily average <95%, monthly average <90%;
3. Altitude: not higher than 1000m;
4. Earthquake intensity: no more than 8 degrees;
5. Place of use: No explosion hazard, chemical and severe vibration and pollution.
6. Service conditions above an altitude of 1000 meters
7. When the altitude exceeds 1000 meters, the air density will decrease relatively, which will affect the protection factor of electrical appliances.

Features

- **Safe and excellent solid-sealed pole**

High reliability, stable insulation performance, stronger structure, miniaturization, maintenance-free, more environmentally friendly, high mechanical resistance"

- **Visual isolation fracture**

Rotary isolation switch with visible fracture after opening"

- **Modular operating mechanism**

The circuit breaker adopts a modular operating mechanism, which can be independently replaced or repaired, and has good interchangeability. It can be manually operated, as well as AC and DC energy storage operations to achieve remote control

- **Three-axis step-by-step operation, reliable mechanical interlock**

The isolation switch, circuit breaker, and grounding switch are operated separately on one axis, and there is a forced mechanical interlocking between the three axes to prevent misoperation

- **Outgoing terminal with non-contact live display sensor**

No capacitance, non-contact induction technology, safe and reliable

- **Cabinet door and connecting switch are designed with reliable interlocking structure**

Ensure operator safety with adjustment-free cabinet door latching

MV Circuit Breaker

VYF-12GD Indoor Three Position Vacuum Circuit Breaker

Technical data

Item	Unit	Parameter		
Rated voltage	kV	12		
(1min) Rated short-time power frequency withstand voltage: phase to phase/break		42/48		
Rated lightning impulse withstand voltage(peak): phase-to-phase/break		75/85		
Secondary circuit power frequency withstand voltage (1min)	V	2000		
Rated frequency	Hz	50		
Rated current	A	630,1250		
Rated short-circuit breaking current	kA	20	25	20
Rated peak withstand current	kA	50	63	50
Rated short-circuit making current	kA	50	63	50
4s rated short-time withstand current	kA	20	25	20
Rated short-time withstand current duration	S	4		
Rated single/back to back capacitor bank breaking current	A	630/400		
Rated capacitor bank making inrush current	kA	12.5(HZ≤1000Hz)		
Rated short-circuit current breaking times	Times	30		
Mechanical life (isolation switch/circuit breaker/grounding switch)		3000/10000/3000		
The accumulative thickness of allowable wear of moving and static contacts	mm	3		
Rated closing operating voltage	V	AC24/48/110/220 DC24/48/110/220		
Rated opening operating voltage				
Rated voltage of energy storage motor	V	AC24/48/110/220 DC24/48/110/220		
Rated power of energy storage motor	W	70		
Energy storage time	s	≤15		
Contact distance	mm	9±1		
Overtravel		3.5±1		
Contact closing bounce time	ms	≤5		
Three-phase opening and closing asynchronous		≤2		
Opening time (rated voltage)		≤40		
Closing time (rated voltage)		≤60		
Average opening speed (contact just opened ~ 6mm)	m/s	0.9~1.3		
Average closing speed (6mm~ contact just closed)		0.4-0.8		
Contact opening rebound amplitude	mm	≤2		
Contact closing contact pressure	N	2400±200(20-25kA) , 3100+200(31.5kA)		
Rated operating sequence		O-0.3s-CO-180s-CO		

MV Circuit Breaker

VYF-12GD Indoor Three Position Vacuum Circuit Breaker

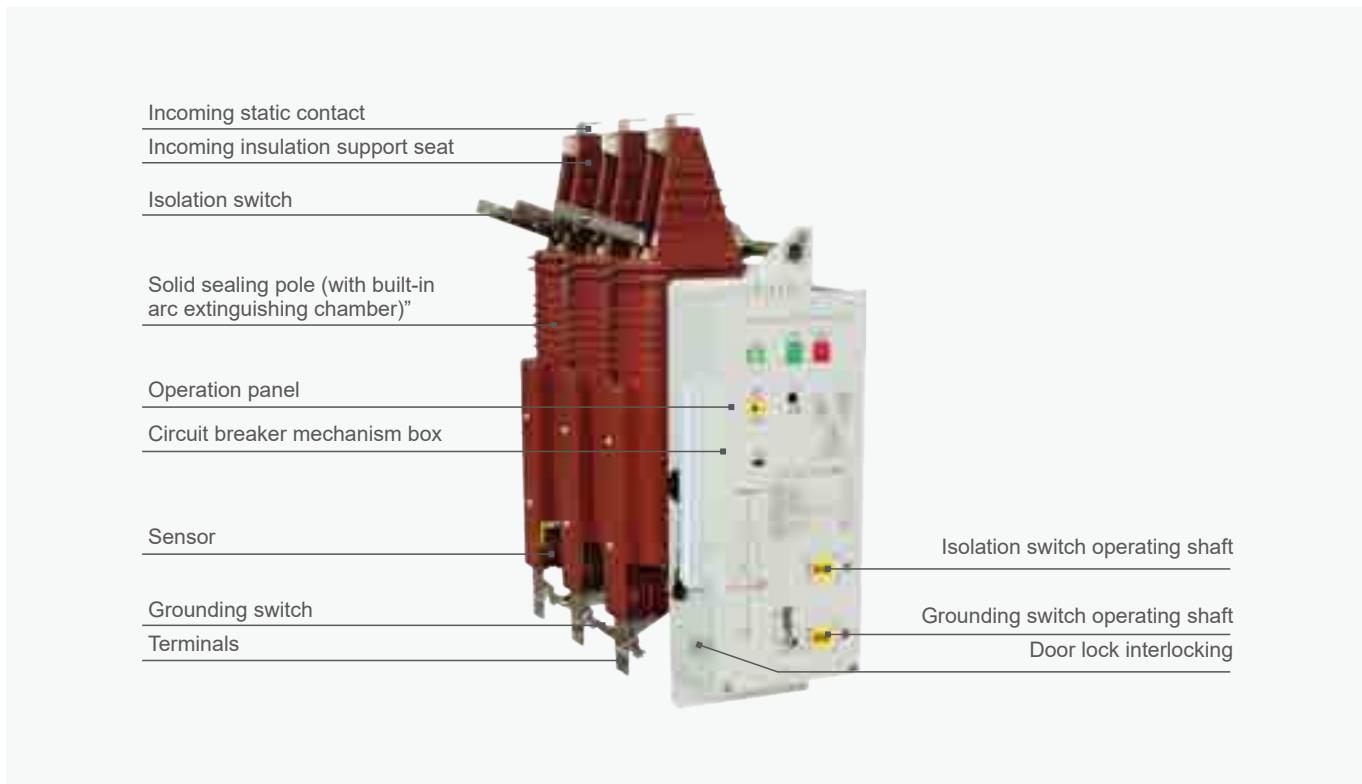
Configuration

Standard configuration: Wiring according to the standard wiring diagram, including anti-tripping device, no locking device, no overcurrent device, no under-voltage device

Item	Parameter	Note
Energy storage motor	75W	Standard
Closing coil	A(D)C24~220V	Standard
Opening coil	A(D)C24~220V	Standard
Isolation switch auxiliary switch	1Open1Close5A	Standard
Grounding switch auxiliary switch	1Open1Close5A	Standard
Energy storage mechanism auxiliary switch	2Open1Close5A	Standard
Circuit breaker auxiliary Switch	8Open8Close5A	Standard
Anti-trip device	A(D)C24~220V	Standard
Live sensor (inductive)	Non-contact	Standard
Locking device	A(D)C24~220V	Optional
Overcurrent release	3.5A, 5A	Optional
Undervoltage device	A(D)C24~220V	Optional

Applicable cabinet type

It can be assembled in small fixed cabinets, ring network cabinets or box transformers. The main circuit of VYF-12GD series three-position combined vacuum circuit breaker is arranged longitudinally. The upper part is an isolation switch, the middle part is a vacuum circuit breaker, and the lower part is a grounding switch. Detector mechanism, interlocking mechanism 1 are positioned at switch front, and this switch can be installed upside down.



MV Circuit Breaker

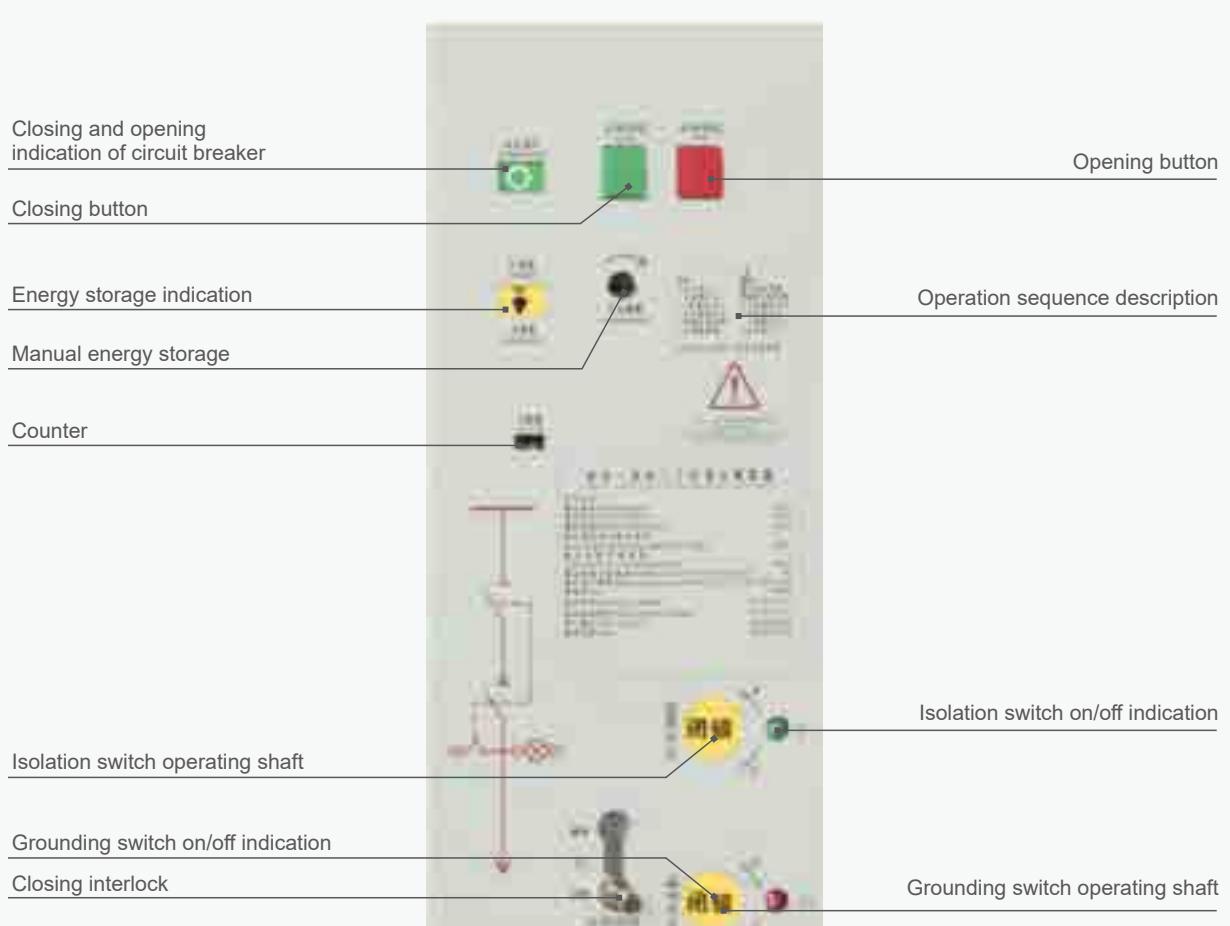
VYF-12GD Indoor Three Position Vacuum Circuit Breaker

Dual interlocking: circuit breakers, isolation switches, and grounding switches are equipped with forced mechanical interlocking operations;

Design anti misoperation locking devices for circuit breakers, isolation switches, and grounding switches;

The isolation switch and grounding switch are operated separately on an independent shaft in steps, and a forced mechanical interlocking operation is set between the two operations;

After the switch opening and closing operation, please observe and confirm their respective opening and closing states.

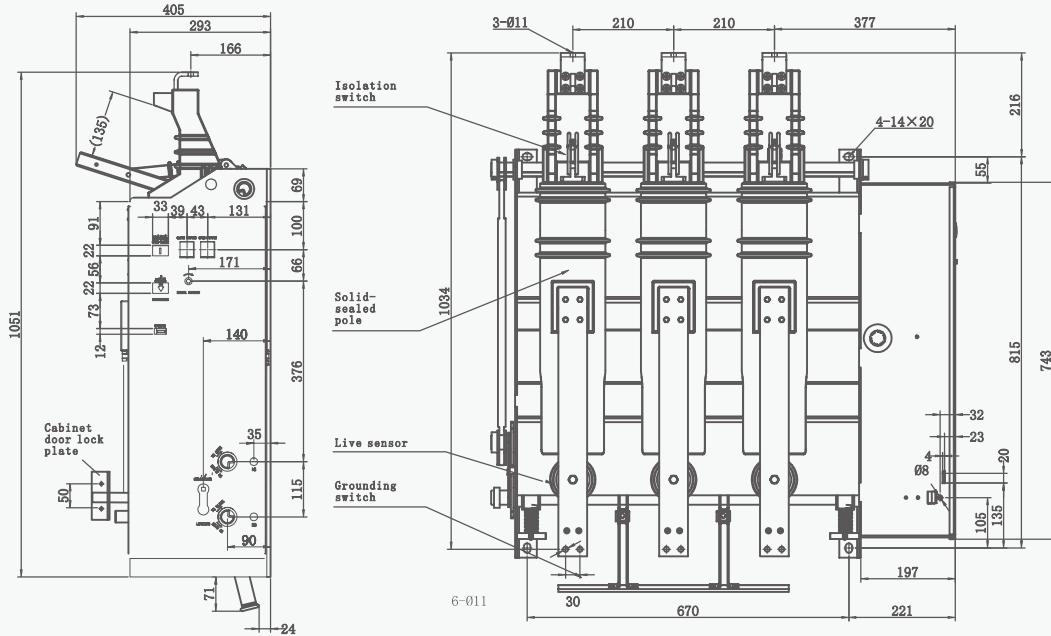


MV Circuit Breaker

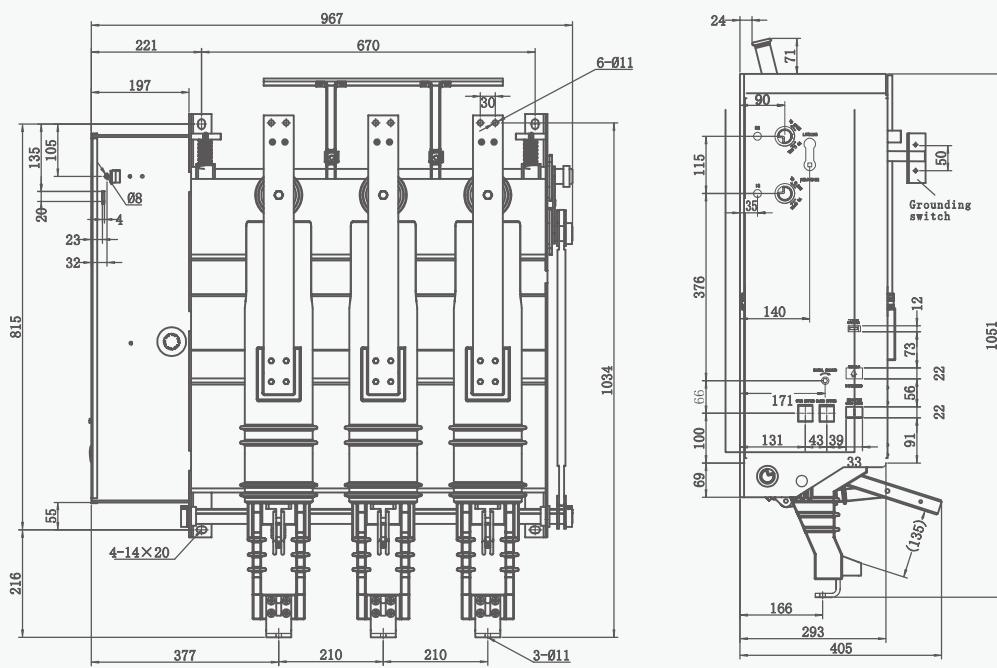
VYF-12GD Indoor Three Position Vacuum Circuit Breaker

Overall and mounting dimensions(mm)

Formal overall dimensions



Formal overall dimensions



MV Circuit Breaker

ZN28(A)-12 Indoor Vacuum Circuit Breaker

- ZN28-12 indoor MV vacuum circuit breaker is high indoor switch equipment of three-phase AC 50Hz, rated voltage 12kV. The product conforms to the GB1984-89 standard, the product structure has two forms: the switch body and the actuator is mounted together or switch body and actuator installed separately. Integrated structure is ZN28-12 basic model; split structure is ZN28A-12 type, suitable for various kinds of fixed type switch cabinet, such as GG-1A (Z), XGNZ-10 (Z) etc..
- It can be equipped with CD17 type DC electromagnetic actuator and CT17, CT19 spring type operating mechanism.

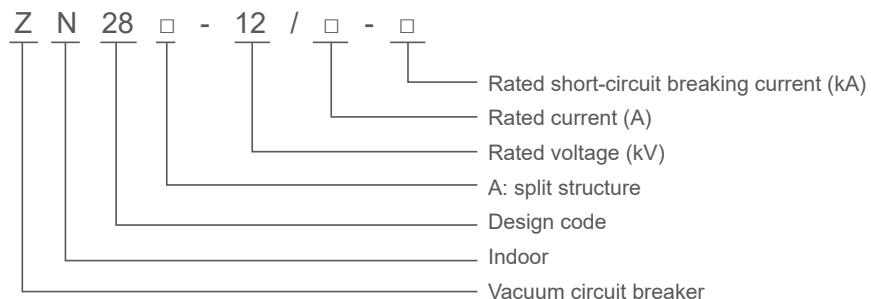
General



MV Circuit Breaker

ZN28(A)-12 Indoor Vacuum Circuit Breaker

Type designation



Operating conditions

1. The environment temperature: upper limit +40°C, lower limit -15°C;
2. Altitude: ≤2000m;
3. Relative humidity: daily average value is not greater than 95%, monthly average is not greater than 90%;
4. Earthquake intensity: less than 8 degrees;
5. No fire, explosion, pollution, chemical corrosion and severe vibration place.



ZN28A-12



ZN28-12

MV Circuit Breaker

ZN28(A)-12 Indoor Vacuum Circuit Breaker

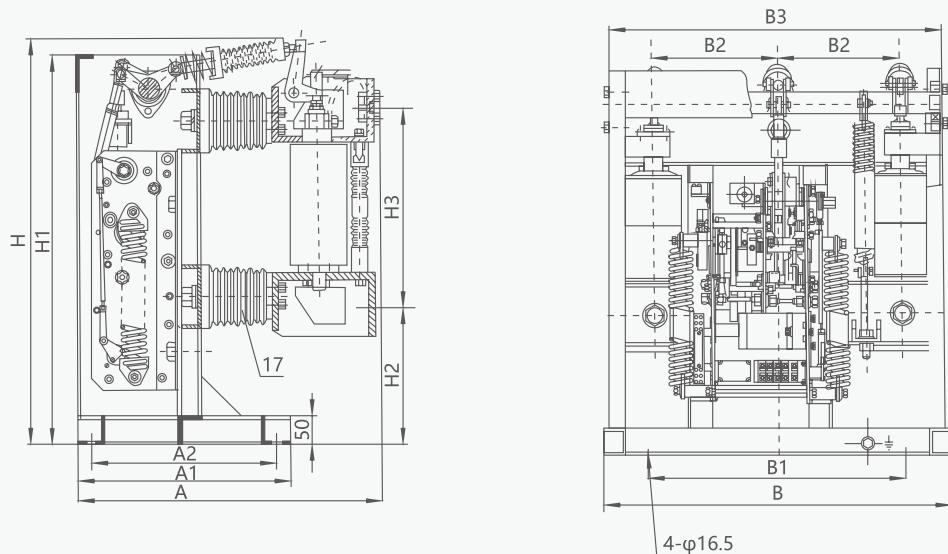
Technical data

Item	Unit	Parameter								
Parameters of voltage, current, life										
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								
Rated current	A	630, 1250	630, 1250	1250, 1600, 2000, 2500	1250, 1600, 2000, 2500					
Rated short-circuit breaking current	kA	20	25	31.5	40					
Rated short-time withstand current (RMS)	kA	20	25	31.5	40					
Rated peak withstand current	kA	50	63	80	100					
Rated short-circuit closing current	kA	50	63	80	100					
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		30						
Rated operating sequence		O-t-CO-180s-CO rated short-circuit breaking current less than 31.5kA, t=0.3s rated short-circuit breaking current 40kA, t=180s								
Rated operation voltage		≈ 220/110								
Mechanical life	Times	≥10000								
Mechanical property parameters										
Open clearance between contacts		11±1								
Overtravel	mm	4±1								
Contact closing bounce time	ms	≤2	≤3							
Three-phase, switching synchronism	ms	≤2								
Average opening speed	m/s	0.9~1.3								
Average closing speed	m/s	0.4~0.8								
Opening time (rated voltage)	ms	≤60								
Closing time (rated voltage)	ms	≤100								

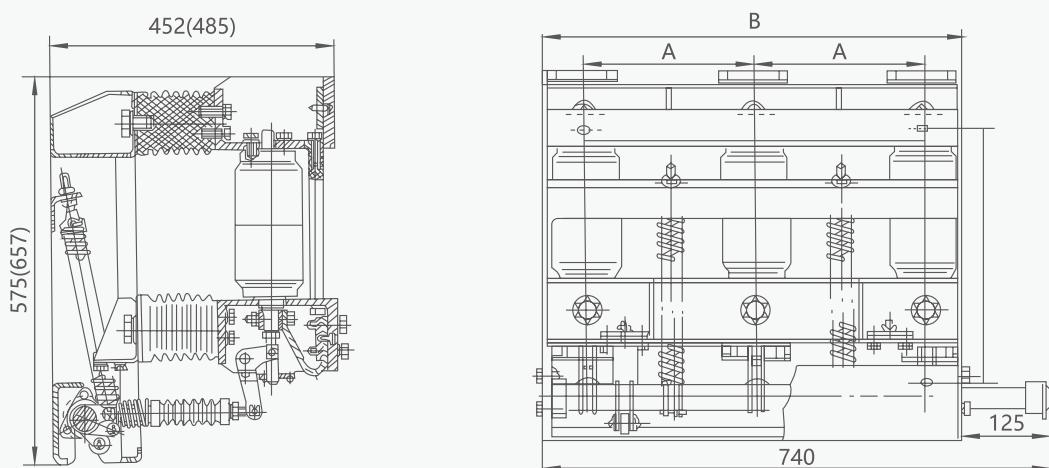
MV Circuit Breaker

ZN28(A)-12 Indoor Vacuum Circuit Breaker

Overall and mounting dimensions(mm)



Type	H	H1	H2	H3	A	A1	A2	B	B1	B2	B3
ZN28-12/T $\frac{2500}{3150}$ -40	780	700	268	371	581	450	390	700	560	275	690
ZN28-12/T2000-31.5	697	677	235	347	550	380	330	634	480	250	620
ZN28-12/T $\frac{630}{1250}$ - $\frac{20}{31.5}$	697	677	235	347	550	380	330	594	440	230	580



Rated current	20KA, 25KA, 31.5KA		40kA	
Code	A	B	A	B
Data	250	610	275	690

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.

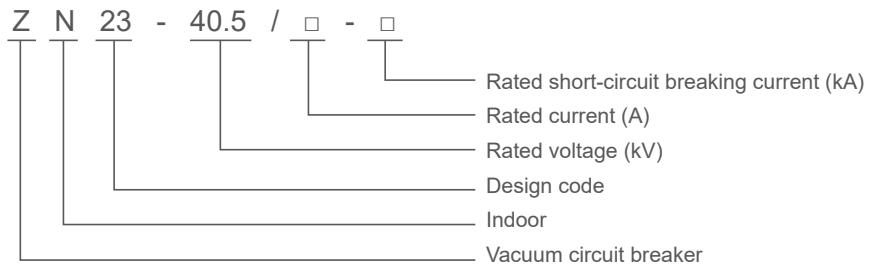
General



MV Circuit Breaker

ZN23-40.5 Indoor Vacuum Circuit Breaker

Type designation



Operating conditions

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

Features

1. 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.
2. 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.

MV Circuit Breaker

ZN23-40.5 Indoor Vacuum Circuit Breaker

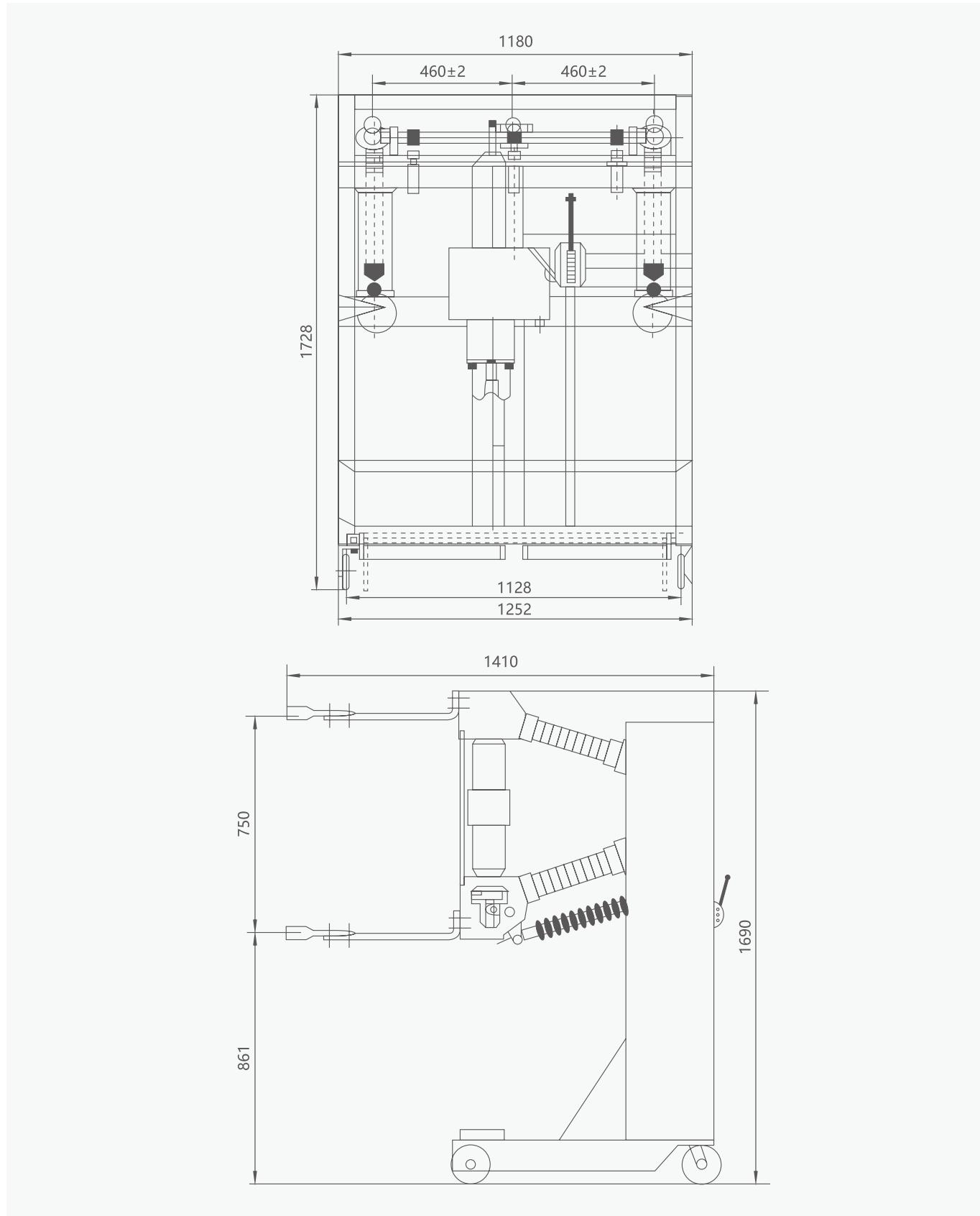
Technical data

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	$\mu\Omega$	≤ 65	
Rated operation voltage		$\leq 220/110$	
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	
Allowable wear thickness for dynamic and static contact	mm	3	

MV Circuit Breaker

ZN23-40.5 Indoor Vacuum Circuit Breaker

Overall and mounting dimensions(mm)



MV Circuit Breaker

ZN85-40.5 Vacuum Circuit Breaker

- ◆ ZN85-40.5 indoor MV 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, The circuit breaker meets the air distance and creepage distance requirements under normal operating conditions, and effectively reduces the volume of circuit breaker. The vacuum interrupter of the main current ring and the dynamic and static conductive connections are installed in the insulating cylinder with a distance of only 300mm. The electrical connection of the main circuit is fixed connection, which has high reliability 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, various occasions and places with harsh operating conditions.

- ◆ Standard: IEC 62271-100

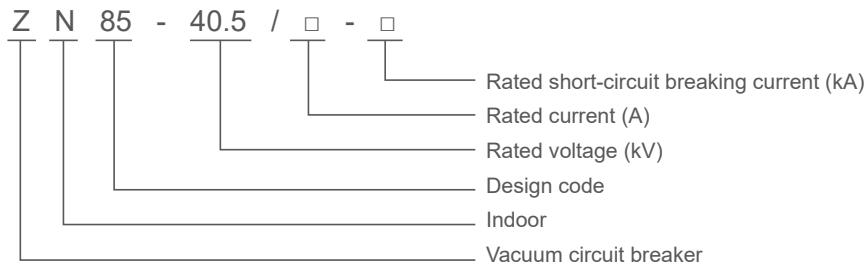
General



MV Circuit Breaker

ZN85-40.5 Indoor Vacuum Circuit Breaker

Type designation



Operating conditions

1. Ambient temperature -10°C~+40°C
2. Altitude ≤ 1500m;
3. Relative humidity: the daily average is not greater than 95%, the monthly average is not greater than 90%, the daily average of saturated steam is not greater than 2.2×10^3 Mpa, and the monthly average is not greater than 1.8×10^3 Mpa;
4. The earthquake intensity does not exceed 8 degrees;
5. Places free of fire, explosion hazards, severe pollution, chemical corrosion and severe vibrations.

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.

MV Circuit Breaker

ZN85-40.5 Indoor Vacuum Circuit Breaker

Technical data

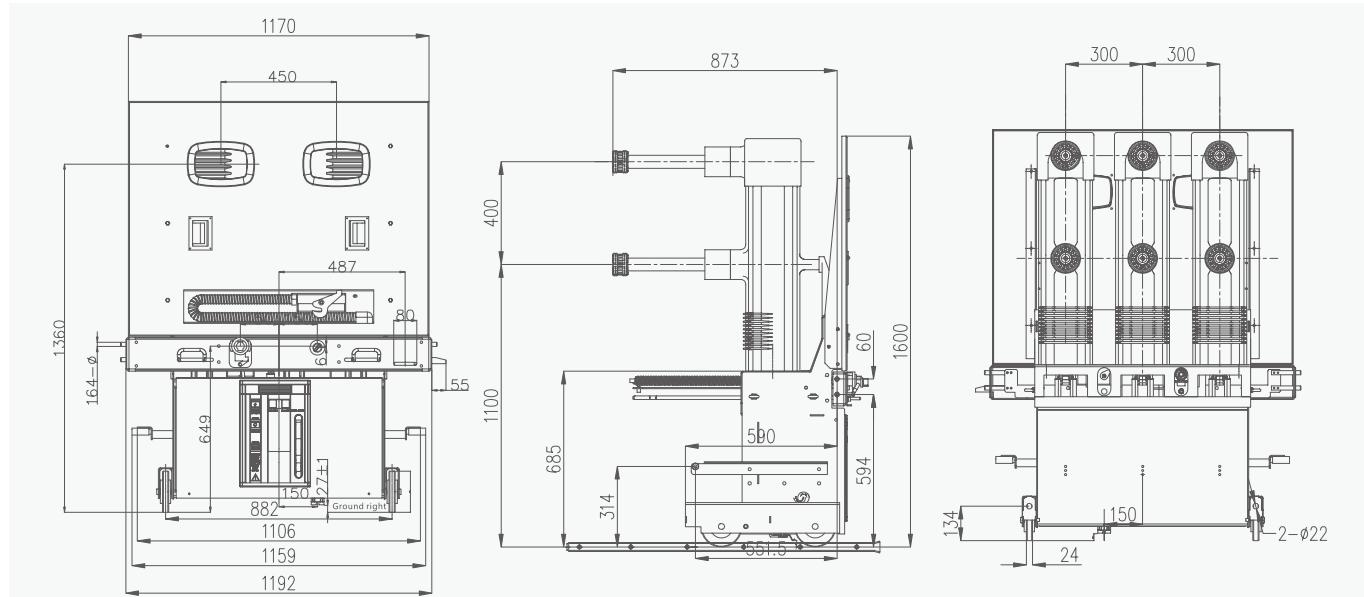
Item	Unit	Parameter	
Parameters of voltage, current, life			
Rated voltage	kV	40.5	
Rated short time power frequency withstand voltage (1min)	kV	95	
Rated lightning impulse withstand voltage (peak)	kV	185	
Rated frequency	Hz	50	
Rated current	A	630, 1250, 1600, 2000, 2500	
Rated short-circuit breaking 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	$\mu\Omega$	≤ 65	
Rated operation voltage		$\leq 220/110$	
Mechanical life	Times	≥ 10000	
Mechanical property parameters			
Open clearance between contacts	mm	18 ± 1	
Overtravel	mm	5 ± 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	
Allowable wear thickness for dynamic and static contact	mm	3	

MV Circuit Breaker

ZN85-40.5 Indoor Vacuum Circuit Breaker

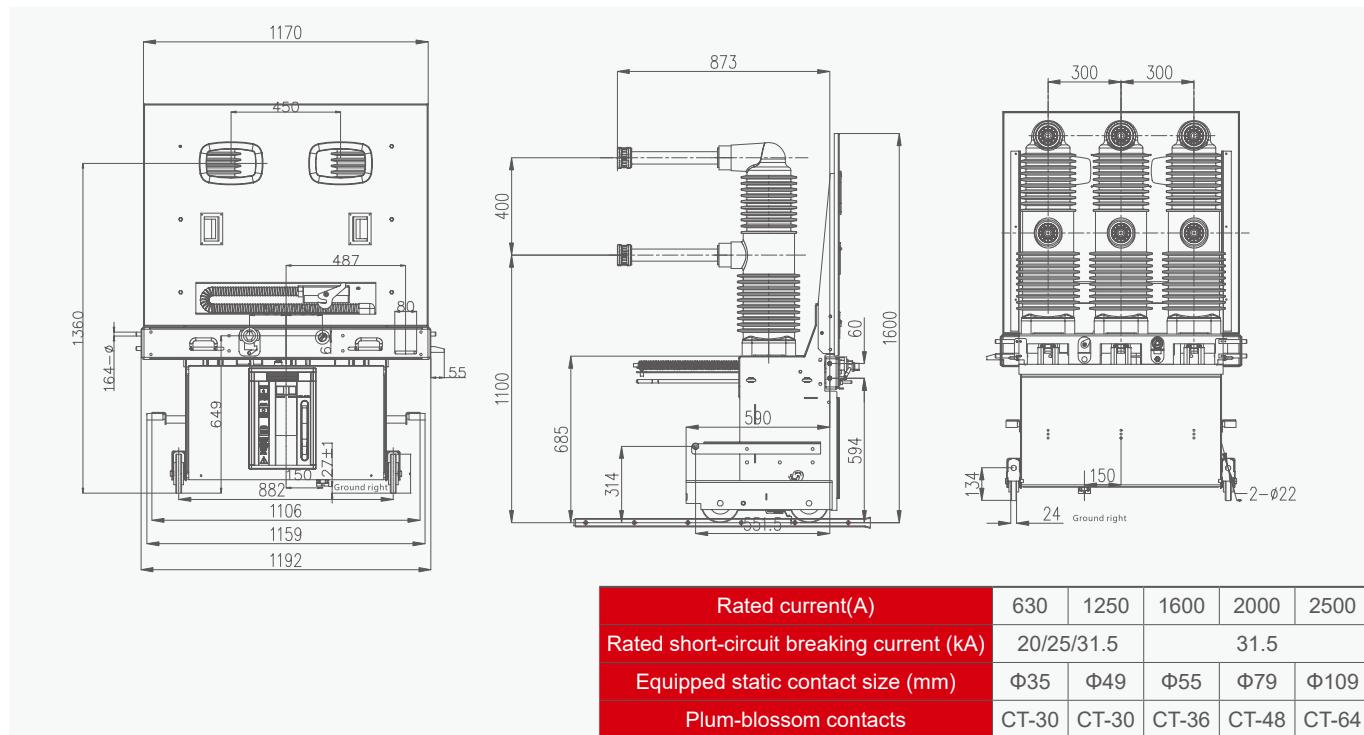
Overall and mounting dimensions(mm)

External dimensions of insulating cylinder type



Rated current(A)	630	1250	1600	2000	2500
Rated short-circuit breaking current (kA)	20/25/31.5			31.5	
Equipped static contact size (mm)	Φ35	Φ49	Φ55	Φ79	Φ109
Plum-blossom contacts	CT-30	CT-30	CT-36	CT-48	CT-64

Dimensions of solid seal type



Rated current(A)	630	1250	1600	2000	2500
Rated short-circuit breaking current (kA)	20/25/31.5			31.5	
Equipped static contact size (mm)	Φ35	Φ49	Φ55	Φ79	Φ109
Plum-blossom contacts	CT-30	CT-30	CT-36	CT-48	CT-64

MV Circuit Breaker

ZW32-12 Outdoor Vacuum Circuit Breaker

- ZW32-12 outdoor MV 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 adopts silicone rubber casing, with longer life, higher reliability, good weather resistance, convenient for transportation, good rating. The operating mechanism adopts 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.
- Can be equipped with power electronics PT for short distance remote control Can be equipped with dual power supply automatic switching device and intelligent automatic recloser prepayment metering automation system
- Standard: IEC 62271-100

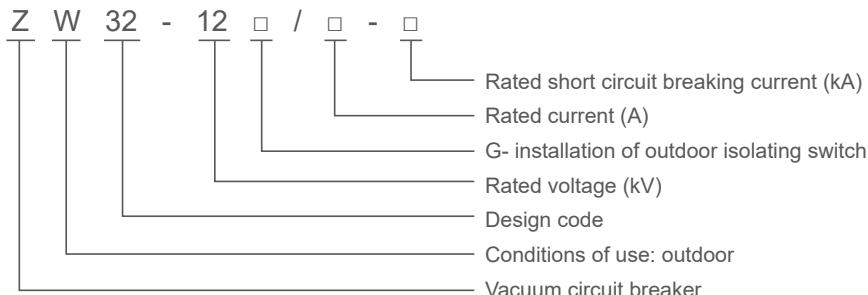
General



MV Circuit Breaker

ZW32-12 Outdoor Vacuum Circuit Breaker

Type designation



Operating 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.



ZW32-12

MV Circuit Breaker

ZW32-12 Outdoor Vacuum Circuit Breaker

Technical data

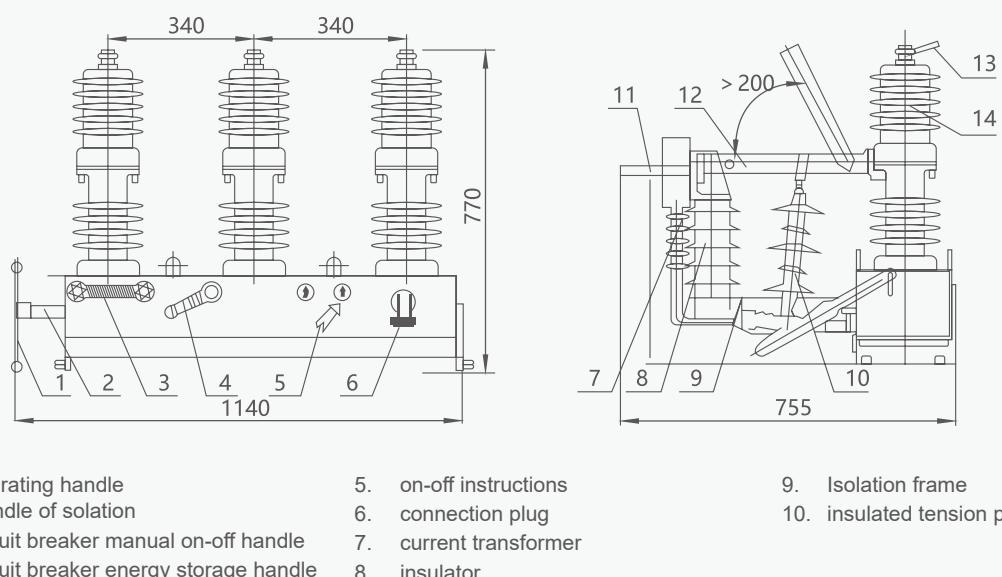
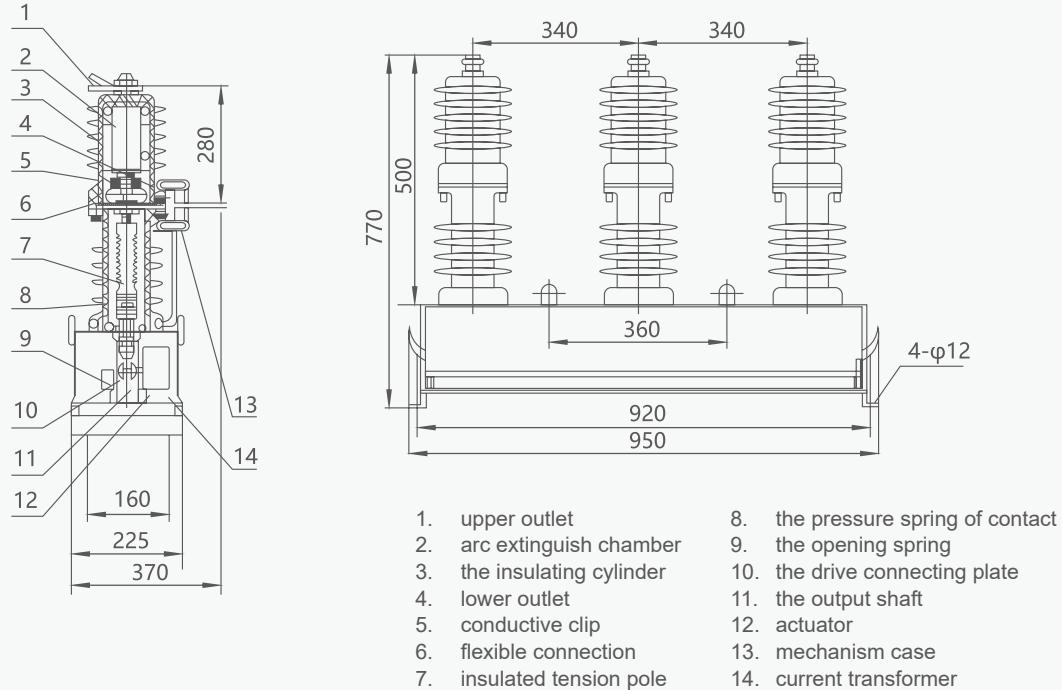
Item	Unit	Parameter
Voltage, current parameters		
Rated voltage	kV	12
Rated short time power frequency withstand voltage (1min)	kV	42/48
Rated lightning impulse withstand voltage (peak)	kV	75/85
Rated frequency	Hz	50/60
Rated current	A	630
Rated short-circuit breaking current	kA	20
Rated short-time withstand 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	$\mu\Omega$	$\leq 80(140)$
Rated operational voltage		AC/DC ≤ 220
Mechanical life	Times	10000
The overcurrent regulating \star	A	1~10
Quick-break current \star	A	6~20
The delay time \star	ms	40~850
Remote control distance \star	m	>30
Reclose time \star	Times	0~3
Rated operating sequence \star		O-0.3s-CO-180s-CO
CT \star	A	(μ)/5
	VA	15
The output voltage \star	A	AC220
The output capacity \star	W	600
The overcurrent regulating \star	A	1~10
The delay time \star	ms	40~850
Remote control distance \star	m	30

the one not marked above is basic technical parameters; marked \star is intelligent technology parameter; marked \star is the electronic PT type technical parameters

MV Circuit Breaker

ZW32-12 Outdoor Vacuum Circuit Breaker

Overall and mounting dimensions(mm)



MV Circuit Breaker

ZW32Y-12 Vacuum Circuit Breaker

- ZW32Y-12/630-20/25 outdoor permanent magnetic MV vacuum on pillar dry circuit breaker (hereinafter referred to as circuit breaker), is the control and protection equipment used in rated voltage 12KV, 50HZ AC three phase high voltage distribution grid. Mainly used for load current, overload current and short-circuit current breaking, closing in the power lines. Applied to substation and industrial and mining enterprises in power system used for protection and control purposes.
- Standard: IEC 62271-100

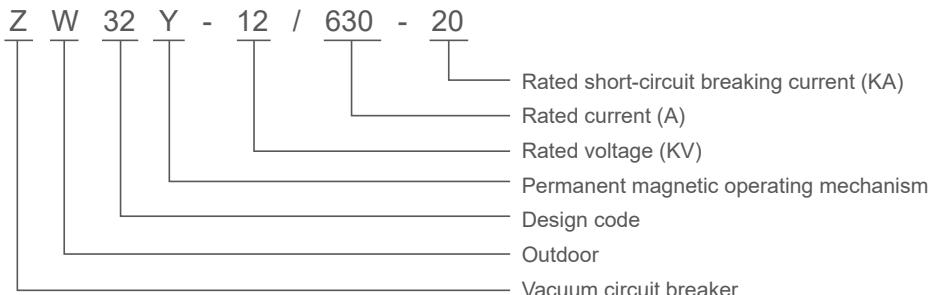
General



MV Circuit Breaker

ZW32Y-12 Vacuum Circuit Breaker

Type designation



Operating conditions

1. Ambient temperature: upper limit +40°C, lower limit -30°C;
2. Altitude: ≤2000m;
3. Wind pressure: not 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 variety less than 25°C.

Technical data

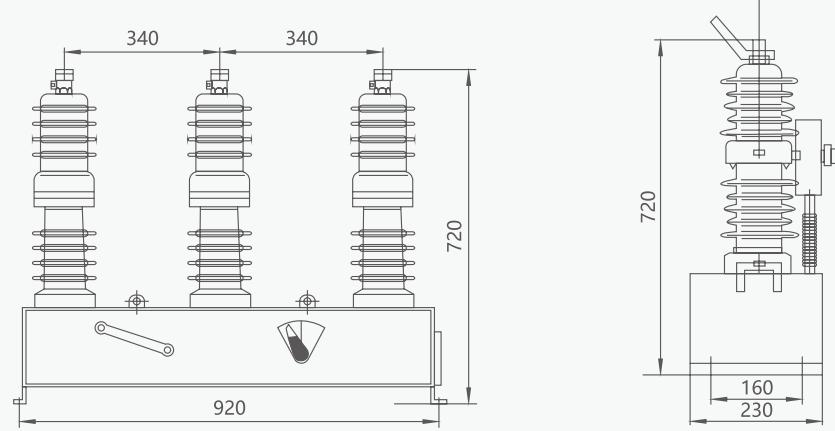
Item	Unit	Parameter
Rated voltage	kV	12
Rated insulation level	1min power frequency withstand voltage	Dry test: 42/ fracture 48; Wet test: 34
	Lightning impulse withstand voltage (peak)	75/ fracture 85
Rated current	A	630, 1250
Rated short-circuit breaking current	KA	20
Rated short-circuit breaking current time	Times	30
Rated short-circuit closing current (peak)	KA	50
Rated peak withstand current	KA	50
Rated short-time withstand current	KA	20
Rated short circuit duration	S	4
Opening time	ms	<50
Closing time	ms	<60
Full off time	ms	≤100
Arcing time	ms	≤50
Mechanical life	Times	30000
Switch on power	J	70
Rated operational voltage and auxiliary circuits rated voltage	V	DC 220
	V	AC 220

MV Circuit Breaker

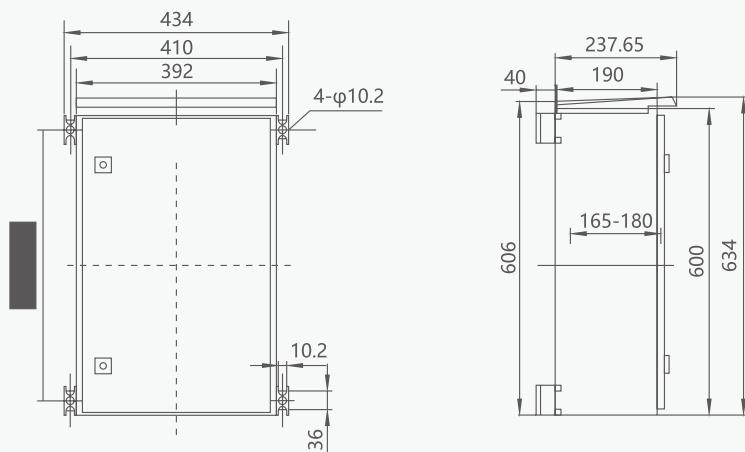
ZW32Y-12 Vacuum Circuit Breaker

Overall and mounting dimensions(mm)

Circuit breaker and mounting dimensions



Controller outline and mounting dimensions



MV Circuit Breaker

ZW32-24 Outdoor Vacuum Circuit Breaker

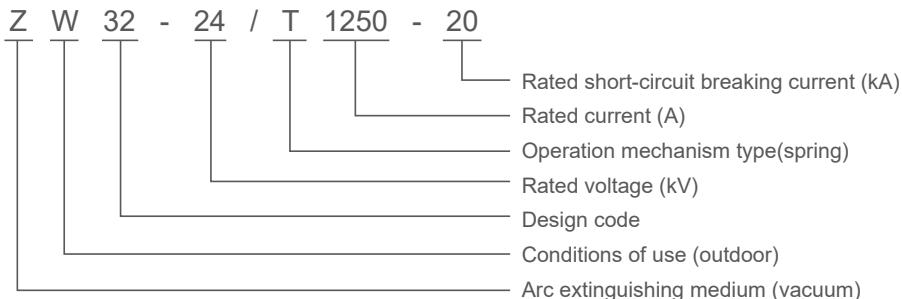
- ⦿ ZW32-24 outdoor MV vacuum circuit breaker (Hereinafter referred to as the circuit breaker) is outdoor distribution equipment with rated voltage 24KV, three phase AC 50Hz. It is mainly used for breaking and closing the load current, overload current and short circuit current of power system. Applied 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



ZW32-24 Outdoor Vacuum Circuit Break

Type designation



Operating conditions

1. Ambient air temperature: The daily temperature variation: -40°C ~+40°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 1000W/m²
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

MV Circuit Breaker

ZW32-24 Outdoor Vacuum Circuit Break

Technical data

Item	Unit	Parameter				
Rated voltage	kV	24				
Rated insulation level	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			

MV Circuit Breaker

ZW32-24 Outdoor Vacuum Circuit Break

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

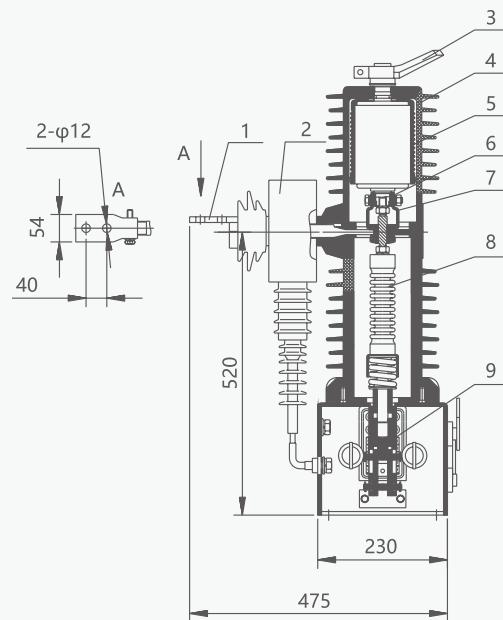
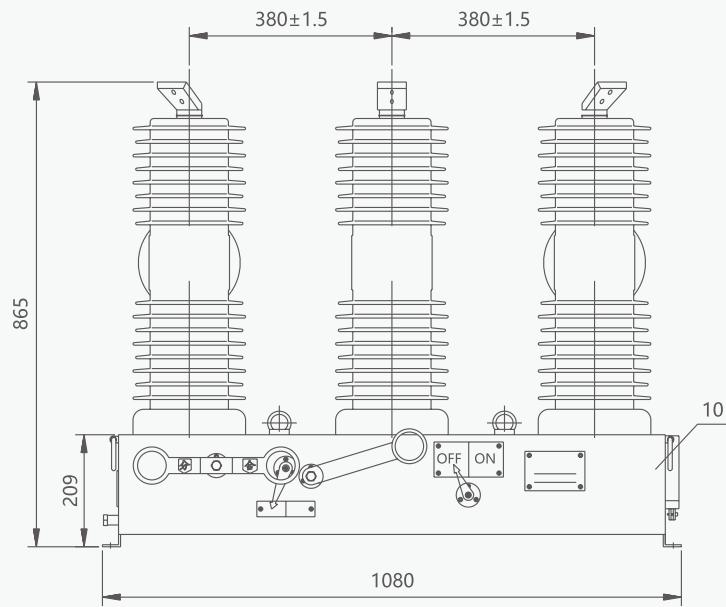
Table 3

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
	Horizontal transverse load	N
	Vertical force	N

MV Circuit Breaker

ZW32-24 Outdoor Vacuum Circuit Break

Overall and mounting dimensions(mm)



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

MV Circuit Breaker

ZW20□-12 Outdoor Vacuum Circuit Breaker

- ◆ ZW20-12 outdoor AC MV vacuum boundary circuit breaker (hereinafter referred to as the boundary circuit breaker) is one of our new products. Boundary circuit breaker is a multifunctional intelligent device with the function of vacuum breaker, vacuum load switch, recloser, sectionalizer four switches. The main configuration consists of vacuum breaker, CH-40 controller, external voltage transformer (Note: distribution automation line ring network available in bilateral PT) three parts. Products are widely used in 10kV, 13kV city, rural power grid space ring network for disconnecting switch, contact switch, automatic switch device which can implement the ring deployment line load. It can be used as boundary switch (commonly known as watchdog) in the branch line of power supply, used as reclosers and sectionalizers in feed overhead distribution network. A boundary circuit breaker is designed with remote management mode, protection and control functions, and communication functions. Reliable detection device with mA level zero sequence current and phase to phase short circuit current can achieve automatic troubleshooting of single-phase grounding faults and phase to phase short circuit faults.
- ◆ The main switch adopts vacuum arc, and the insulation adopts SF6 and N2 mixed gas. The case introduces the gas sealing, explosion-proof, and insulation system technologies of Japan, Germany, and France, and the overall sealing performance is excellent. The interior is filled with SF6, N2 mixed gas, no leakage, and not affected by the external environment. The spring operating mechanism adopts a miniaturized and performance-optimized design, and its action reliability is much higher than that of the traditional spring mechanism.
- ◆ Standard: IEC 62271-100

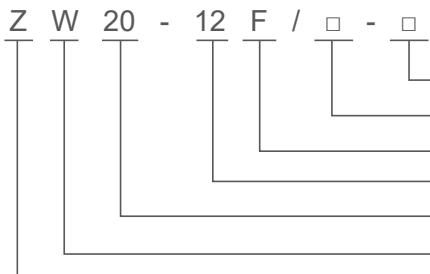
General



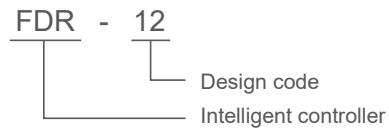
MV Circuit Breaker

ZW20□-12 Outdoor Vacuum Circuit Breaker

Type designation



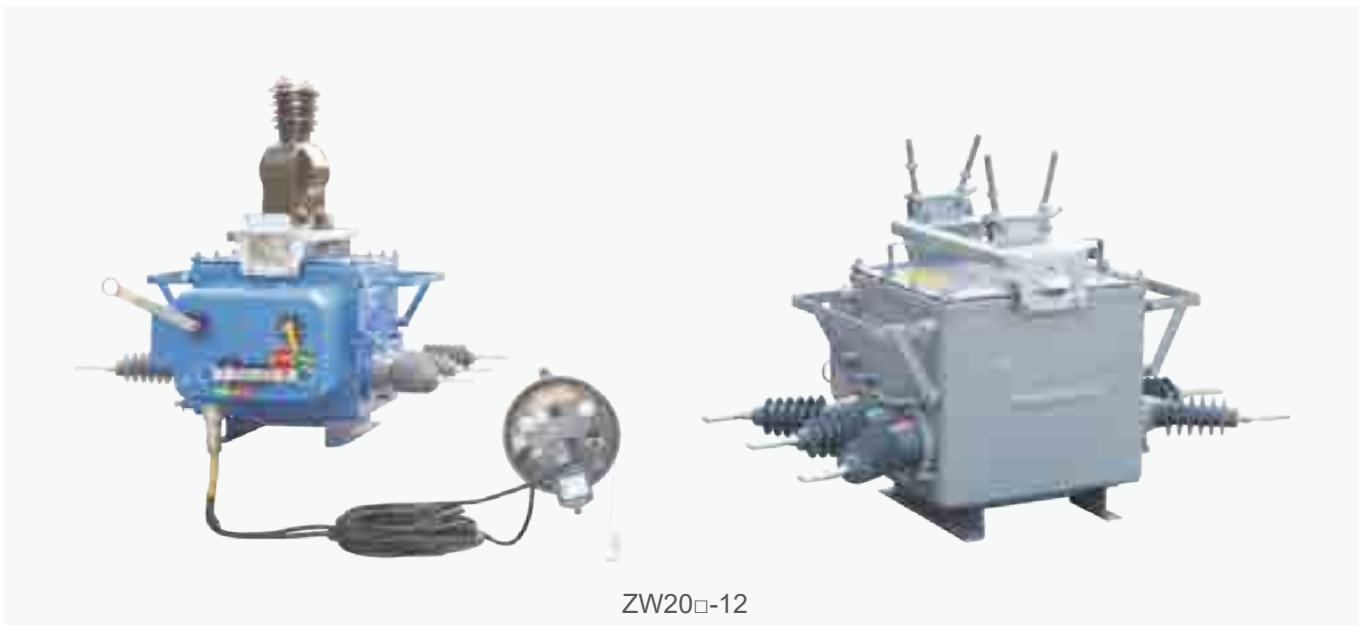
Rated short-circuit breaking current (kA)
Rated current (A)
Boundary type
Rated voltage (kV)
Design code
Conditions of use: outdoor
Arc extinguishing media: vacuum



Design code
Intelligent controller

Operating conditions

1. Altitude≤2000 meters
2. The environment temperature: -30°C~+55°C outdoor; the highest annual average temperature 20 °C, the highest daily average temperature 30 °C;
3. Relative humidity: 95% (25°C)
4. Seismic capacity: horizontal ground acceleration 0.3g, vertical ground acceleration 0.15g, at the same time duration of three sine waves, a safety factor of 1.67
5. Earthquake intensity: 7 degrees
6. The maximum daily temperature difference: 25 °C
7. The intensity of sunshine (wind speed 0.5m/s): 0.1W/cm²
8. The maximum wind speed: 34m/s
9. The maximum ice thickness: 10mm
10. Installation position: out door, the 10kV overhead line responsibility demarcation point
11. Grounding: neutral non grounding, arc suppression coil grounding and low resistance grounding.



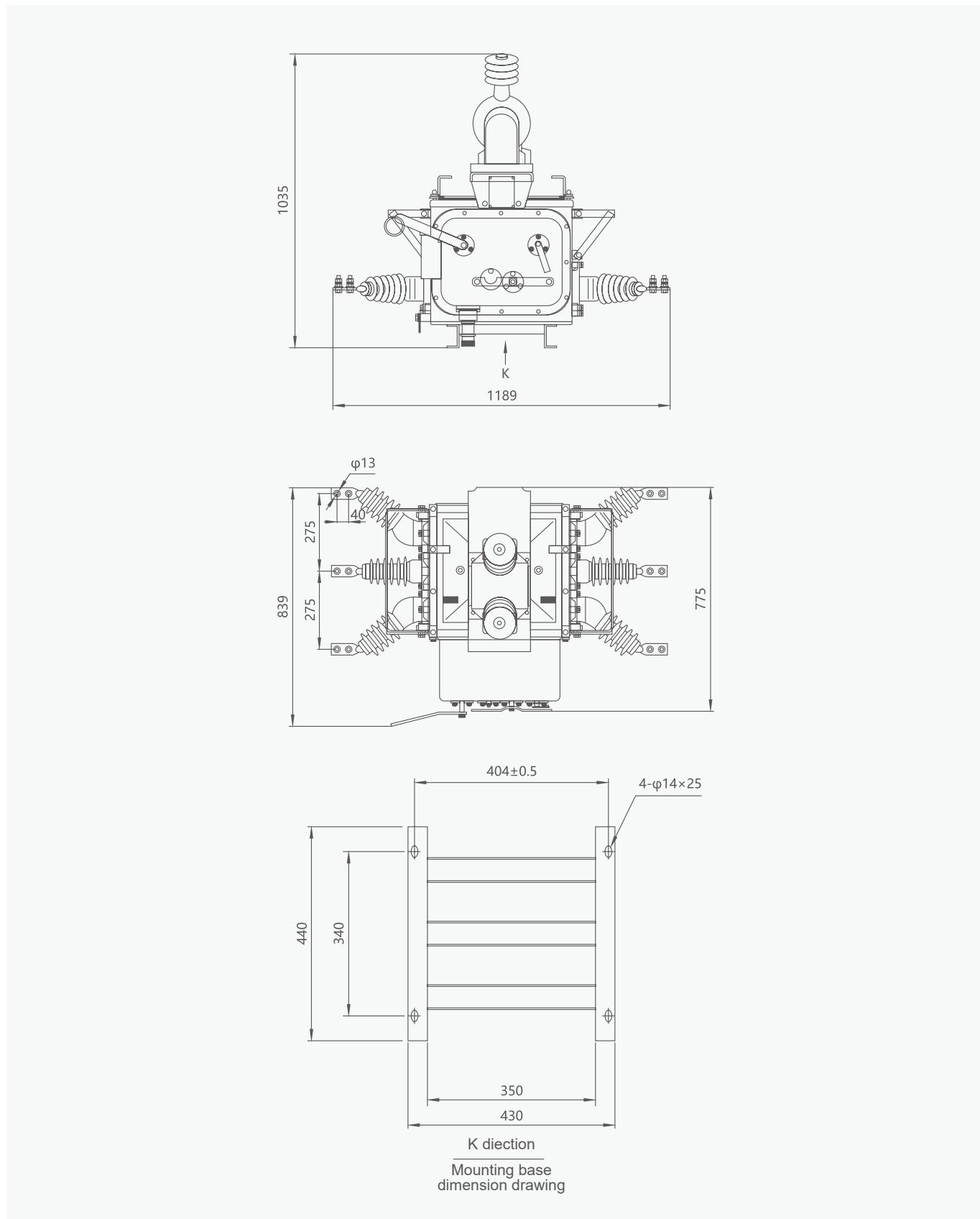
ZW20□-12

MV Circuit Breaker

ZW20□-12 Outdoor Vacuum Circuit Breaker

Technical data

Item	Unit	Parameter
Voltage, current parameters		
Rated voltage	KV	12
Insulation level of fracture	The power frequency (dry and wet test)	KV
	Lightning impulse test voltage (peak)	KV
On the ground and interphase insulation level	Power frequency	Dry test
		Wet test
		Lightning impulse test voltage (peak)
Rated current	A	630
Rated short-circuit breaking current	kA	16, 20, 25
Rated short-circuit breaking current interruption times	Times	30
Rated short-time withstand current	kA	16, 20, 25
Rated short circuit duration	S	4
Rated short-circuit close current (peak)	kA	40, 50, 63
Rated peak withstand current	kA	40, 50, 63
Mechanical life	Times	>10000
Rated current on and off times	Times	10000
Net weight	kg	180
Mechanical properties		
Clearance between open contacts	mm	9 ⁺¹ _{-0.5}
Contact overtravel	mm	3 ⁺¹ _{-0.5}
Opening speed	m/s	1.2±0.2
Closing speed	m/s	0.6±0.2
Contact closing jump time	ms	≤2
Phase spacing	mm	280±2
External charged air insulation distance	mm	235±2
External creepage distance	cm/kV	3.8
Three phase opening different period	ms	≤2
Each phase conductive loop resistance	μΩ	≤150
Closing time	ms	20~60
Opening time	ms	18~45
The energy storage motor rated power	W	≥ 40
The energy storage motor rated voltage	V	AC220
Rated closing operating voltage	V	AC220
Maximum / minimum closing operating voltage	V	AC264/143
Rated opening operation voltage	V	AC220
Maximum / minimum voltage of motor	V	AC264/143
Maximum / minimum opening operating voltage	V	AC242/187
Ratecl pressure SF6 gas (gauge)	MPa	"0"

ZW20□-12 Outdoor Vacuum Circuit Breaker**Overall and mounting dimensions(mm)**

MV Circuit Breaker

ZW8-12 Outdoor Vacuum Circuit Breaker

- ZW8-12/□ outdoor MV vacuum circuit breaker is mainly used for AC 50Hz, voltage 10~12KV three phase power system, used for breaking and closing the load current. It has overload and short circuit protection function. It can be equipped with surge current time delay protector and the lightning arrester or isolating switch namely breaker and isolating switch combination etc. according to user needs.
- Can be equipped with power electronicsPT 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
- Standard: IEC 62271-100

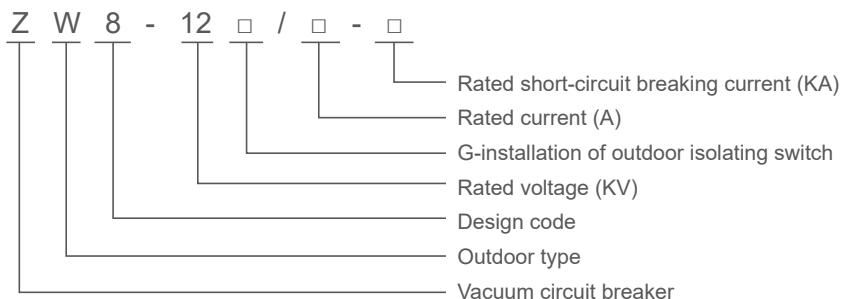
General



MV Circuit Breaker

ZW8-12 Outdoor Vacuum Circuit Breaker

Type designation



Operating conditions

1. Ambient temperature: upper limit +40°C, lower limit -30°C;
2. Altitude \leq 2000 meters
3. Pressure: not 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 variety less than 25°C.



MV Circuit Breaker

ZW8-12 Outdoor Vacuum Circuit Breaker

Technical data

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 galvanic loop resistance	$\mu\Omega$	≤ 120 (200 isolation)
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 $\square/5$
	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:

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

MV Circuit Breaker

ZW8-12 Outdoor Vacuum Circuit Breaker

Structure characteristic

>>ZW8-12/T type outdoor high voltage vacuum circuit breaker

ZW8-12/T type outdoor high voltage vacuum circuit breaker is ZW8-12 series common type. ZW8-12/T equipped with spring operating mechanism, with function of break and close the load current, over load current and short circuit current, etc.

Circuit breaker equipped with disconnector can be composed of combined circuit breaker which has obvious fracture (hereinafter referred to as the "combination of circuit breaker"). The isolating switch adopts silicon rubber insulation jacket, the jacket has the characteristics of anti-wind, rain, snow, sand, dirt corrosion, can effectively prevent the isolation switch frozen and oxidation.

The breaker can be equipped with the lightning arrester, the arrester according to user requirements can be installed in the inlet, either outlet side;

The circuit breaker can be equipped with inrush current controller, which can equipped it with eliminate inrush current and over current function;

The circuit breaker can be installed 2~3 pieces of measuring transformer.

>>ZW8-12/C type outdoor high voltage vacuum circuit breaker

ZW8-12/C type outdoor high voltage vacuum circuit breaker has all the functions of the basic type circuit breaker, equipped with recloser controller to comprise of recloser intelligent circuit breaker. The basic type and recloser controller equipped is suitable for easy taking power supply occasions. PT and recloser controller equipped is suitable for occasions without power supply. Intelligent circuit breaker is suitable for power supply system of radial power supply and ring power supply system, help system to eliminate the transient fault, automatic recovery of power supply, also can isolate the permanent fault, realize distribution automation.

Intelligent circuit breaker with 1~3 Times reclosing function, and parameters can be set;

Intelligent circuit breaker with close inrush current control, over current protection and short circuit fast breaking three composite protection function, and parameters can be continuous tuning;

Intelligent circuit breaker has the function of small current grounding protection, and the parameters can be continuously tuning;

Intelligent circuit breaker can realize the wired remote control, also can be wireless remote control under the rod.

>>ZW8-12/PT type outdoor high voltage vacuum circuit breaker

ZW8-12/PT type outdoor high voltage vacuum circuit breaker has all the functions of the basic type circuit breaker, this circuit breaker is equipped with voltage transformer. Voltage transformer take power from the high voltage side of the line, according to the need to provide 220V, 110V, 100V voltage for itself or other control device;

The circuit breaker (small hydropower type) can be used to monitor the line voltage, when over-voltage or under voltage, the controller automatically disconnect the circuit breaker, and can be widely used for small hydropower and main grid grid connected branch, realize the automatic isolation of fault and network monitoring;

The circuit breaker (measurement type) can output 0.2 level accuracy voltage, current signal, is the ideal choice for rural substation, outside the station point switch and simple measurement switch.

MV Circuit Breaker

ZW8-12 Outdoor Vacuum Circuit Breaker

>>ZW8-12/PT type outdoor high voltage vacuum circuit breaker

ZW8-12/electron PT outdoor high-voltage vacuum circuit breaker has all the functions of the basic circuit breaker. The circuit breaker equipped with electronic PT takes power from CT to charge the battery, and can perform multiple energy storage and opening and closing operations in the case of voltage loss, and can provide working voltage for external equipment; it has strict surge current control, over-current protection and short-circuit quick-break triple composite protection, and the protection parameters can be set by the user; not only can realize wired remote control, but also wireless remote control under the lever.

Overall and mounting dimensions (mm)

Figure 1 ZW8-12/T shape and size of installation

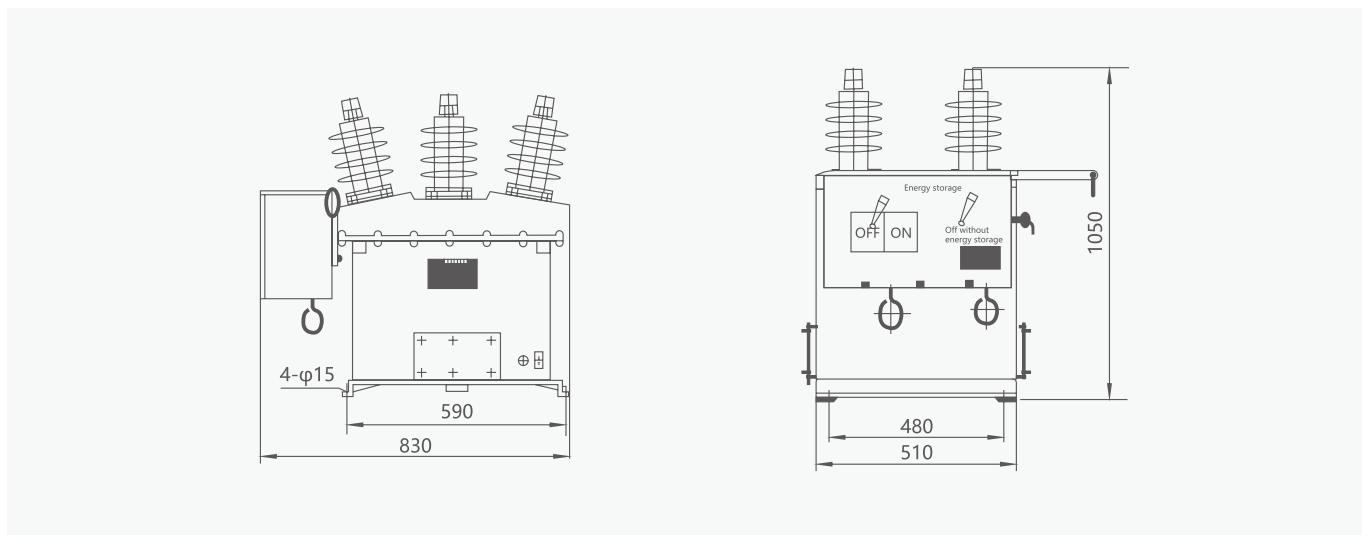
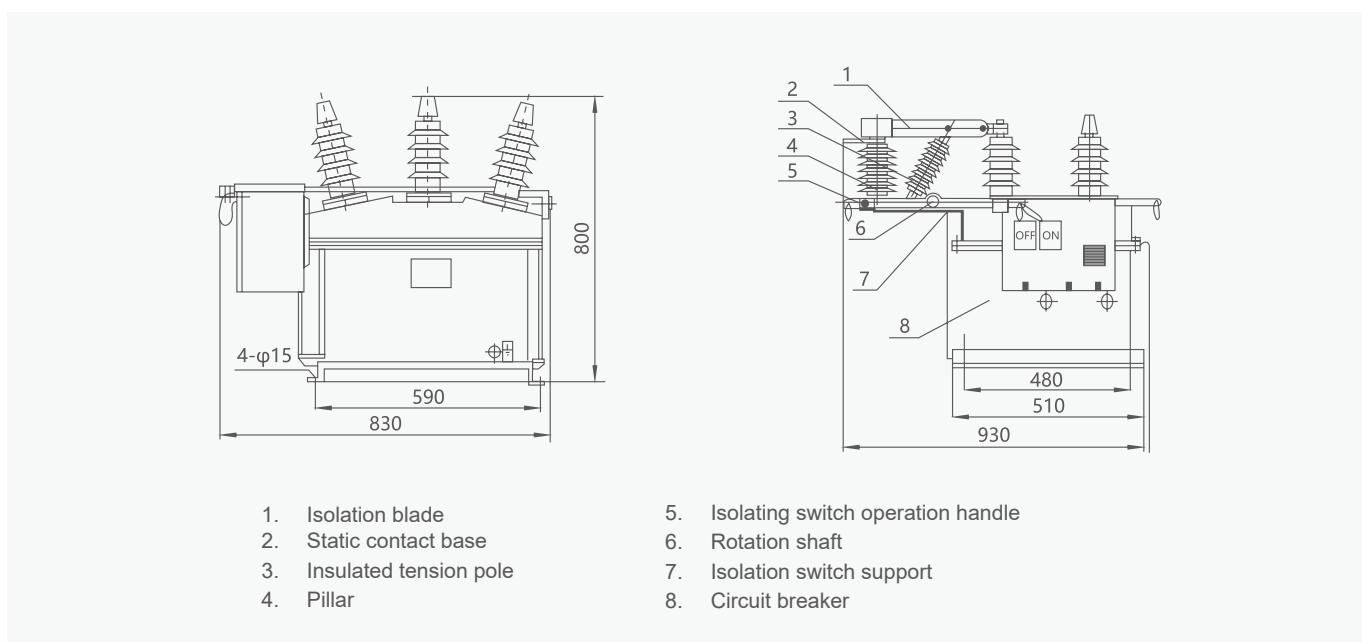


Figure 2 ZW8-12G/T shape and size of installation



MV Circuit Breaker

ZW8-12 Outdoor Vacuum Circuit Breaker

Figure 3 ZW8-12/C, ZW28-12/PT type shape and size of installation

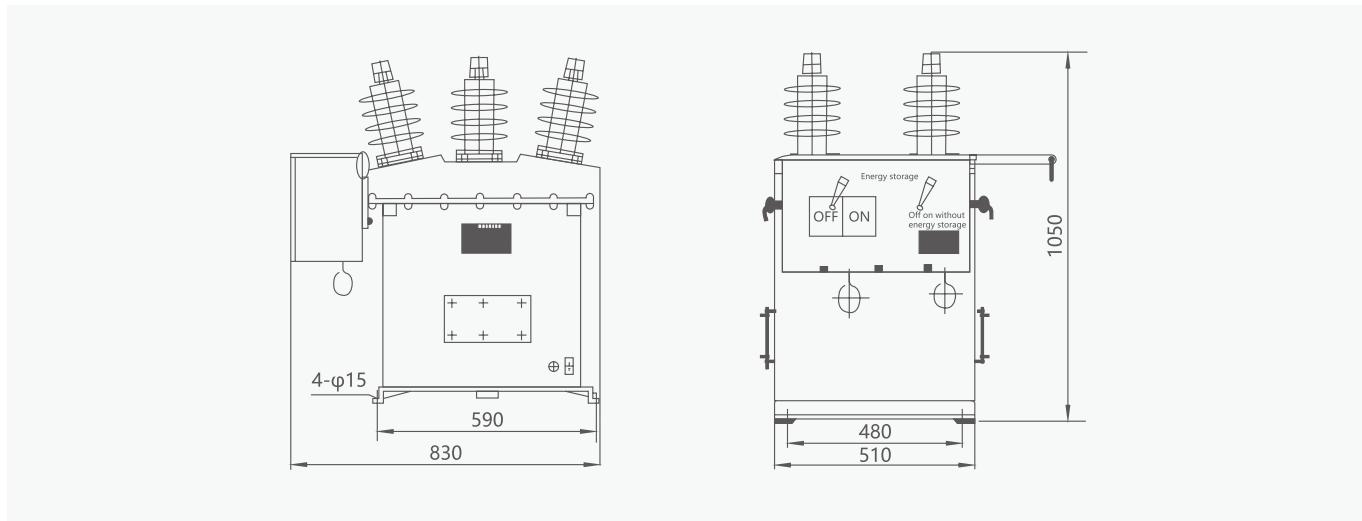
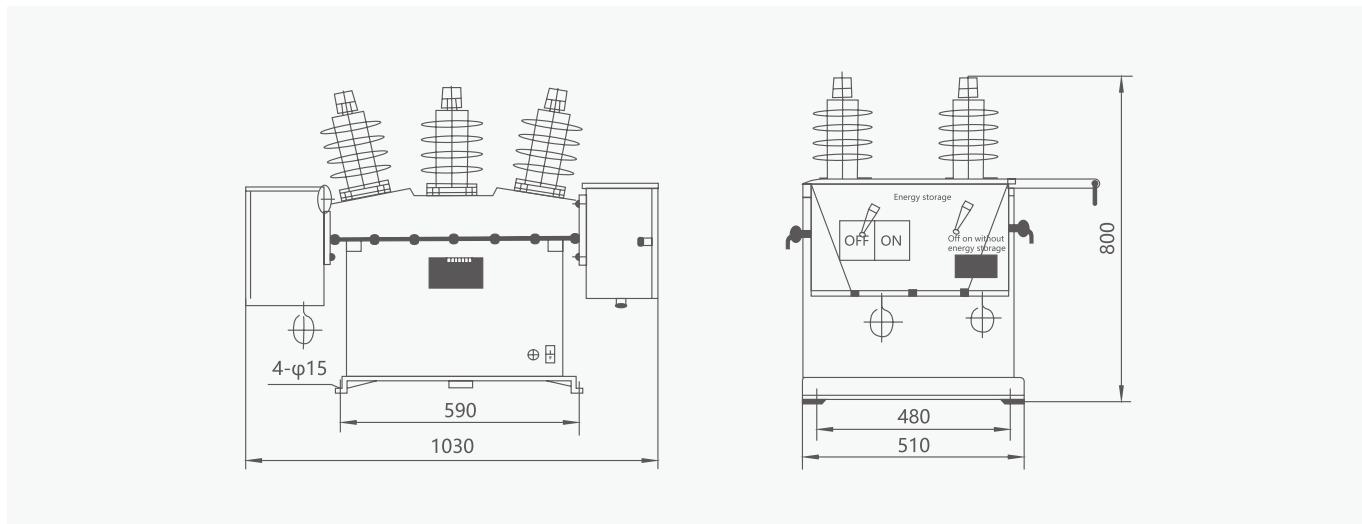


Figure 4 ZW8-12/electric PT type shape and size of installation

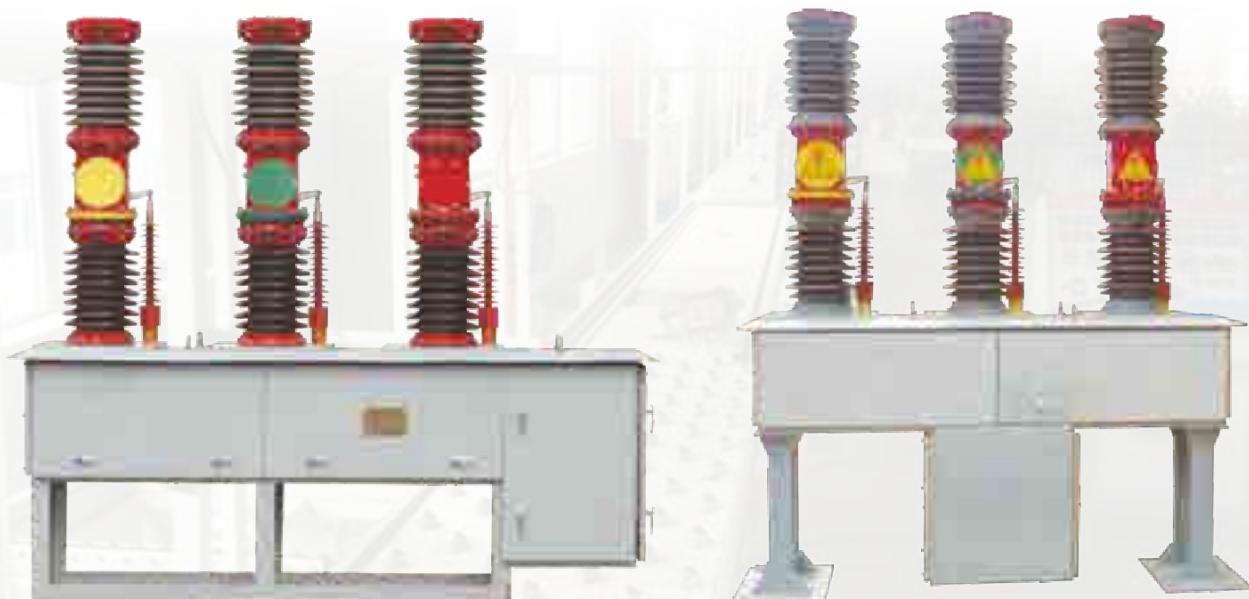


MV Circuit Breaker

ZW7-40.5 Outdoor Vacuum Circuit Breaker

- ◆ ZW7-40.5 outdoor medium-voltage vacuum circuit breaker is a three-phase AC 50Hz outdoor high-voltage electrical equipment; it is suitable for the control and protection of 20-40.5kV power transmission and distribution systems; it can also be used in the occasions of section circuit breakers and switched capacitor banks; this product can be used with piecewise controller, the reclosing device can realize intelligent sectioning and reclosing control of the power system. A current transformer can be added for measurement and protection. The ring circuit breaker is equipped with a spring or electromagnetic actuator, with reliable mechanical performance and frequent operation; there is no risk of fire and explosion.
- ◆ The main characteristics of the circuit breaker are excellent breaking performance, vacuum arc, high breaking capacity, mechanical life up to 10000 times, simple structure, maintenance free, and long maintenance cycle; Good insulation performance and strong anti pollution ability; Current transformers can be installed according to customer requirements, with a measurement accuracy of up to 0.2 level, enabling three-phase interaction.
- ◆ Standard: IEC 62271-100

General



MV Circuit Breaker

ZW7-40.5 Outdoor Vacuum Circuit Breaker

Operating conditions

1. Ambient temperature: upper limit +40°C, lower limit -30°C; Days difference does not exceed 32K;
2. Altitude: 1000m and the following areas;
3. Wind pressure: not more than 700Pa (corresponding to the wind speed 34m/s);
4. Air pollution level: IV class
5. Earthquake intensity: do not exceed 8 degree;
6. Ice thickness: no more than 10mm.

Technical data

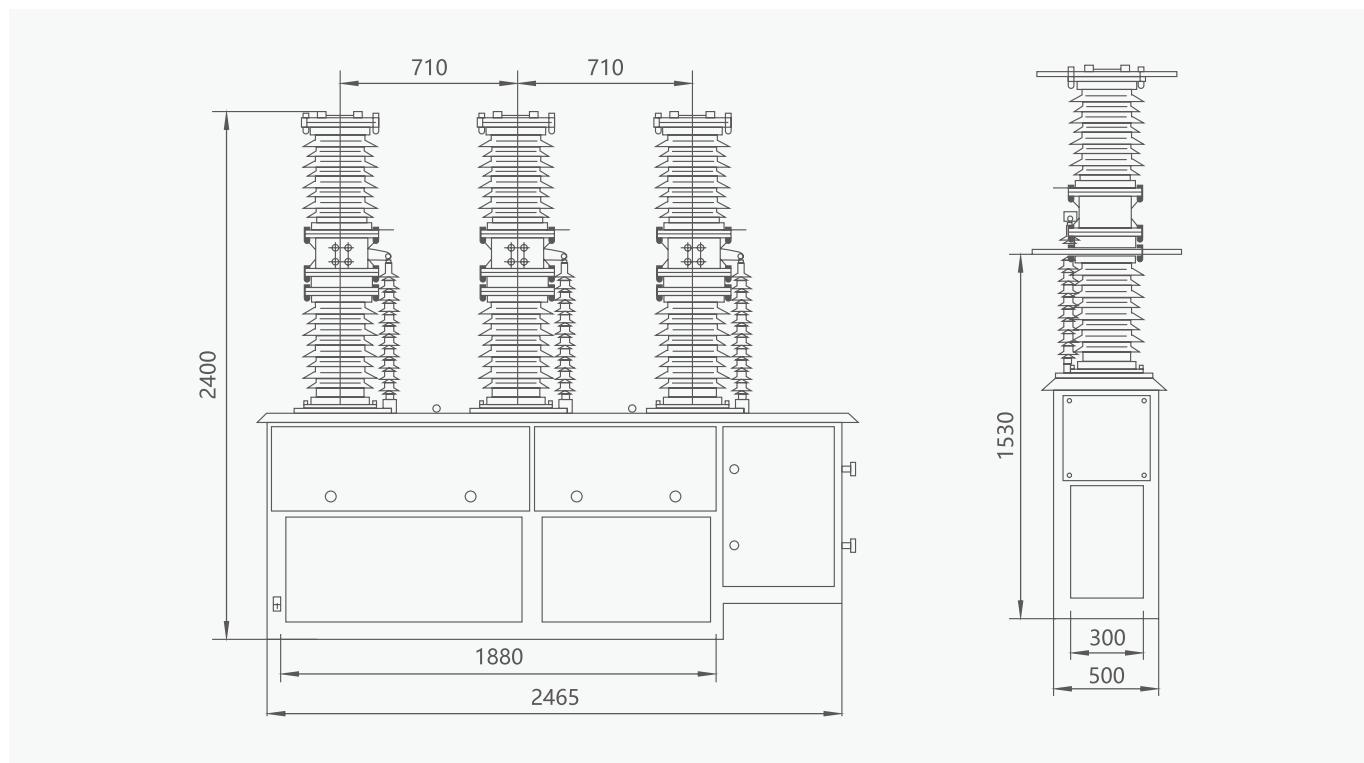
Item	Unit	Parameter
Voltage, current parameters		
Rated voltage	kV	40.5
Rated short time power frequency withstand voltage (1min)	kV	95
Rated lightning impulse withstand voltage (peak)	kV	185
Rated current	A	1250, 1600, 2000
Rated short-circuit breaking current	kA	25, 31.5
Rated operating sequence		O-0.3s-CO-180s-CO
Rated short-circuit current breaking times	Times	12
Rated short-circuit closing current (peak)	kA	63, 80
Rated peak withstand current	kA	63, 80
Rated short-time withstand current	kA	25, 31.5
Rated short-circuit current duration	S	4
Average opening velocity	ms	1.5±0.2
Average closing speed	ms	0.7±0.2
Contact closing bounce time	ms	≤5
Three-phase close (open) synchronization error	ms	≤2
Closing time	ms	≤150
Opening time	ms	≤60
Mechanical life	Times	10000
Rated operational voltage and auxiliary circuits rated voltage	V	DC220, AC220
DC resistance of circle every phase (not including transformer)	μΩ	≤100
Dynamic, static contact allowed to wear thickness	mm	3
Weight	kg	800

MV Circuit Breaker

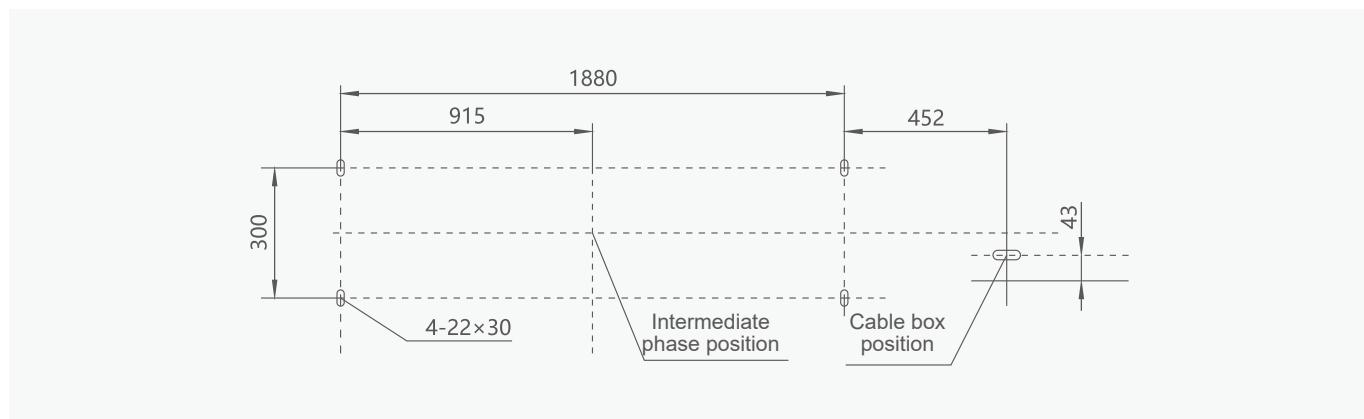
ZW7-40.5 Outdoor Vacuum Circuit Breaker

Overall and mounting dimensions (mm)

The ZW7-40.5 shape and size of installation



Installation base diagram



MV Load Switch



CNC
ELECTRIC

MV Load Switch

FLN36 Indoor SF6 Load Switch

- FL(R)N36 indoor MV SF6 load switch is an indoor switchgear with rated voltage of 12kV, 24kV and 40.5kV, using SF6 gas as arc extinguishing and insulating medium, including three stations of closing, opening and grounding. It has the characteristics of small size, convenient installation and use, and strong applicability to the environment.
- Combine FL(R)N36 indoor high-voltage SF6 load switch with other electrical components to realize control and protection functions. It can be used for the control and protection of industrial and mining enterprises, civil power supply and electrical equipment in secondary substations. Among them, the load switch-fuse combined electrical appliance matches the protection characteristics of the transformer, and is especially suitable for the ring network power supply unit.
- Standard: IEC 60265-1, IEC 62271-105.

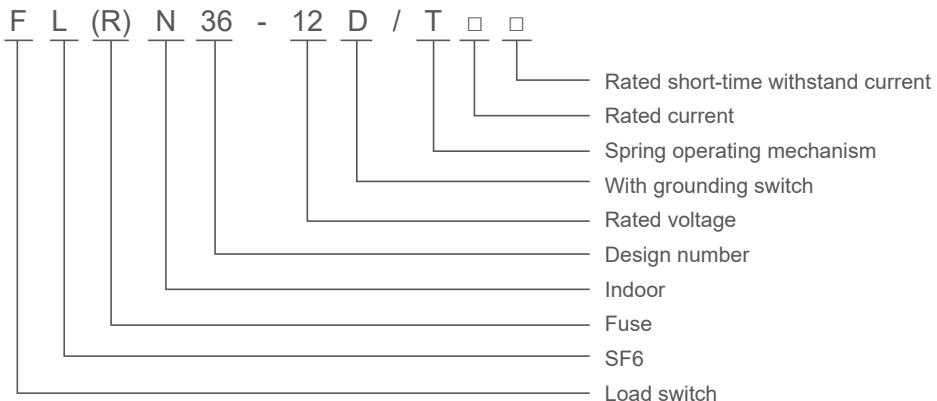
General



MV Load Switch

FLN36 Indoor SF6 Load Switch

Type designation



Operating conditions

1. Air temperature Maximum temperature: +40°C; Minimum temperature: -35°C
2. Humidity Monthly average humidity 95%; Daily average humidity 90% .
3. Altitude above sea level Maximum installation altitude: 2500m
4. Ambient air not apparently polluted by corrosive and flammable gas, vapor etc.
5. No frequent violent shake

MV Load Switch

FLN36 Indoor SF6 Load Switch

Technical data

Item	Unit	Value		
Rated voltage	kV	12	24	36
Rated lightning impulse withstand voltage Common value	kV	75	125	170
Across the isolating distance	kV	85	145	195
Rated short duration power frequency withstand voltage Common value	kV	28	50	70
Across the isolating distance	kV	32	60	80
Rated frequency	Hz	50/60	50/60	50/60
Rated current I_r	A	630	630	630
Rated short time withstand current	kA	25	20	20
Rated duration of short circuit	s	2	3	3
Rated peak withstand current	kA	62.5	50	50
Pole Distance	mm	200, 210	210, 250, 275	350
Making and breaking tests (IEC 60265-1) for FLN36 switch				
Mainly active load current	A	630	630	630
Chlosed-loop distribution circuit current	A	630	630	630
Cable charging current	A	50 and 10	50 and 10	50 and 10
Line charging current	A	20	20	20
Cable and line charging current under earth faults	A	87	87	87
Short circuit making current	kA	62.5	50	50
Making and breaking tests (IEC 60420) for FRLN36 switch-fuse combination				
Withstand and switch on the cut-off current of the fuse	kA	25	20	20
Breaking test with I_{ng} preacing time of fuse		OK	OK	OK
Breaking capacity at rated transfer current	A	1530	920	630
Mechanical performance				
Mechanical endurance of switch close/open	Ns	1000		
Mechanical endurance of switch open/earth	Ns	1000		
Ambient temperature				
Maximum value	°C	55		
Maximum value of 24 h mean	°C	55		
Minimum value	°C	-15		
Altitude above sea level	m	≤1800		

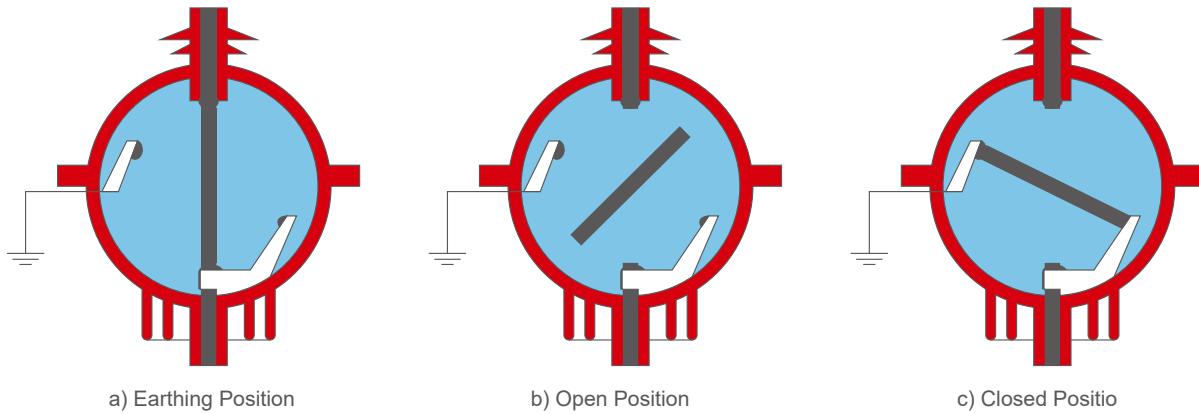
MV Load Switch

FLN36 Indoor SF6 Load Switch

Primary circuit loop of load break switch

Primary loop of FLN36-12 indoor load break switch and its combination is sealed in a epikote casted insulate unit by APG technology, this insulate unit has features of good insulating property, dust and dirts proof, insulate unit contains upper and lower insulate covers, inside charged 0.4bars pressure SF6 gas, the partial siding of lower cover is very thin, it's a protective measure and will burst out in the malfunction, the over pressed gas is released to protect the equipment.

***SF6 load break switch and its fuse combination has open,close and earth three working position.



Arc extinction

RLS-24D load break switch adopts SF6 gas as the medium of arc extinction, when switch on and off, arc occurs and will spin under the magnetic field effect ion by the permanent magnet, cooled by the SF6 gas and extricated finally.

This indoor SF6 load break switch and its fuse combination works with spring type operating mechanisms A and K ,RLS-24 load break switch equipped with the K spring operating mechanism is applied as the incoming control unit, while that equipped with A mechanism is applied as the outgoing protective unit and transformer unit.

LBSkit 24 kv outline



MV Load Switch

FLN36 Indoor SF6 Load Switch

1. "K" Type Spring Operating Mechanism

Working principle of K type spring operating mechanism is spring press and release (see fig 1. it's in off position)

A) Earthing operation

Driven by the handle, the upper crank arm 4 rotates and compresses the spring 2 to store energy. When the maximum energy is reached, the crank arm continues to rotate, and the energy storage spring begins to release energy to drive the upper trigger, causing the connecting rod to drive the crank arm. The rotation of the crank arm drives the moving contact for earthing.

B) Switch on operation

Driven by the handle, the lower crank arm 1 rotates, the spring 2 is pressed to store energy, and when the energy is released, the trigger 8 is driven to make the connecting rod drive the crank arm, the crank arm rotates, drives the mobile contactor, and the load break switch is turned on.

C) Switch off operation

Rotate the main shaft crank arm counterclockwise by the handle, release the energy storage spring and the load break switch is turned off.

2. "A" Type Spring Mechanism

Working principle of A type mechanism is same as K type, in addition, it has fuse striker trip function. For A type mechanism, electromagnetic trip is also available on customers requirement.(see fig 2)

A) Switch on operation

Driven by the handle, lower crank arm 1 rotates to press switch on spring 12 and switch off spring 8 at the same time, to provide sufficient energy required by switching off. when the lower crank arm 1 buckles the pin and drives trigger to move, it makes the lower roller wheel trip, and release the switch on spring and load switch is turned on.

B) Switch off operation

Press the switch off button or push the trip pin 2 by the fuse striker, release the spring and load switch is turned off .

C) Earthing operation

Earthing operation of A type mechanism is same as that of K type.

K type and A type operating mechanism can be operated manually or motorized on request.

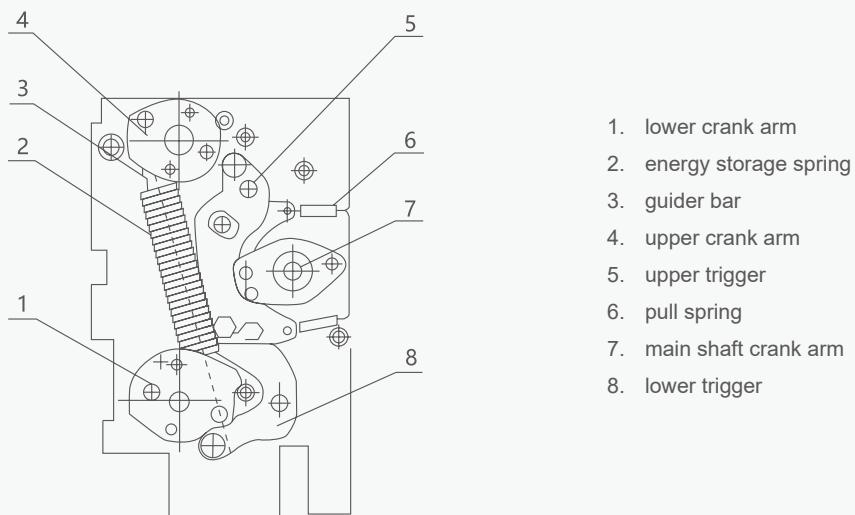
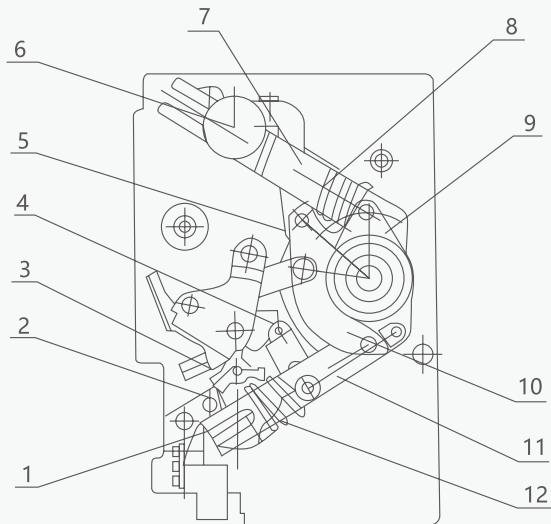


Fig 1: K type spring operating mechanism

MV Load Switch

FLN36 Indoor SF6 Load Switch



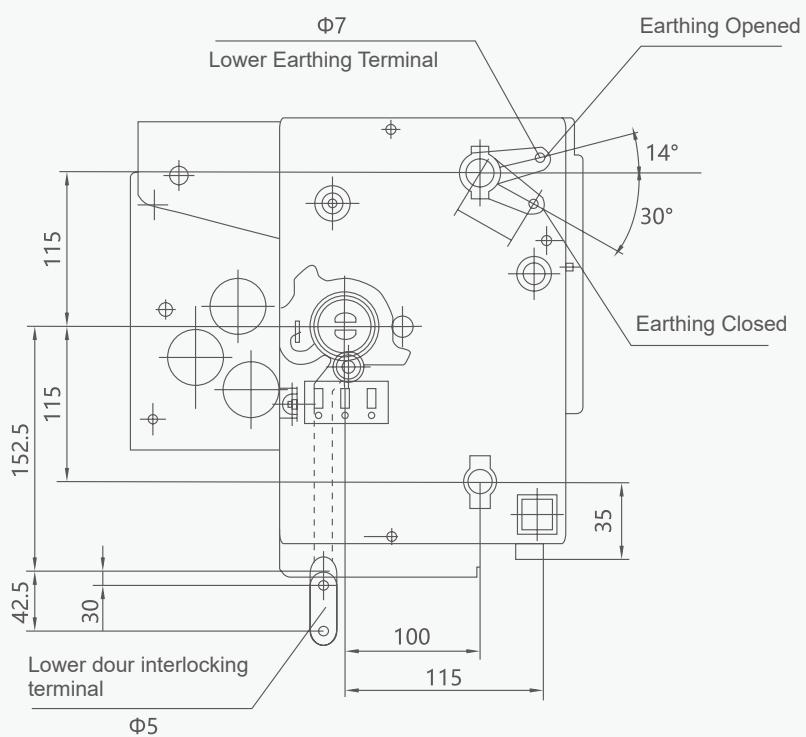
1. lower crankshaft
2. trip pin
3. cam
4. lower roller wheel
5. upper roller wheel
6. upper crankshaft
7. upper guider bar
8. switch off spring
9. energy storage crank arm
10. main shaft crank arm
11. lower guider bar
12. switch on spring

Fig 2: A type spring operating mechanism (switch on position)

Operating mechanism & Interlock Mechanism Interlock

RLS-24D indoor type medium voltage SF6 load break switch and its fuse combination has below interlocks:

- A) When load break switch turns on, earthing operation can't be done
- B) When earthing switch turns on, load break switch turns on/off operation can't be done
- C) Interlock outlet of mishandling pretension is equipped



MV Load Switch

FLN36 Indoor SF6 Load Switch

Overall and mounting dimensions (mm)

Matching dimension of SF6 load break switch-fuse combination

Fig 1) SF6 load break switch without upper cubicle

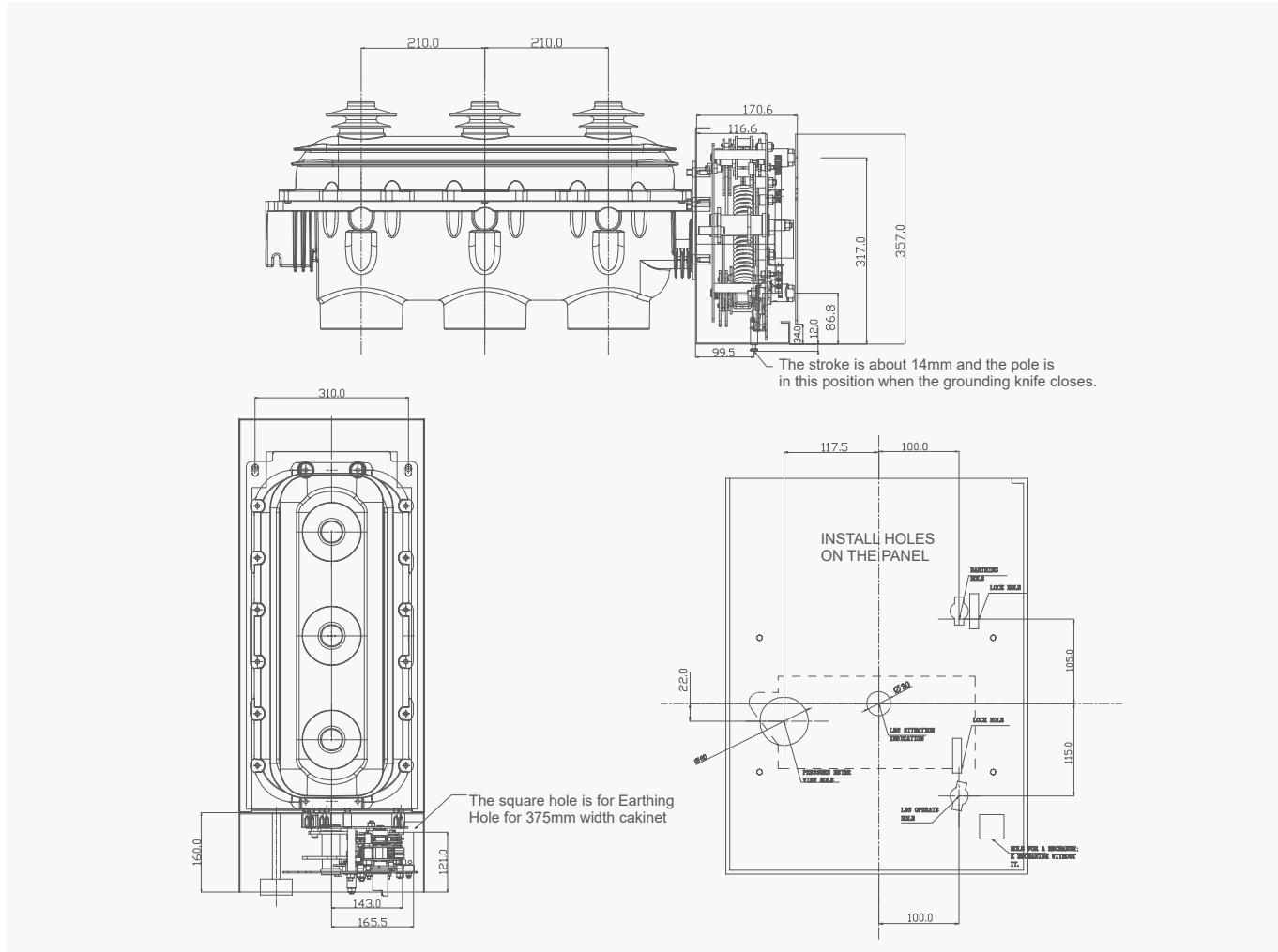
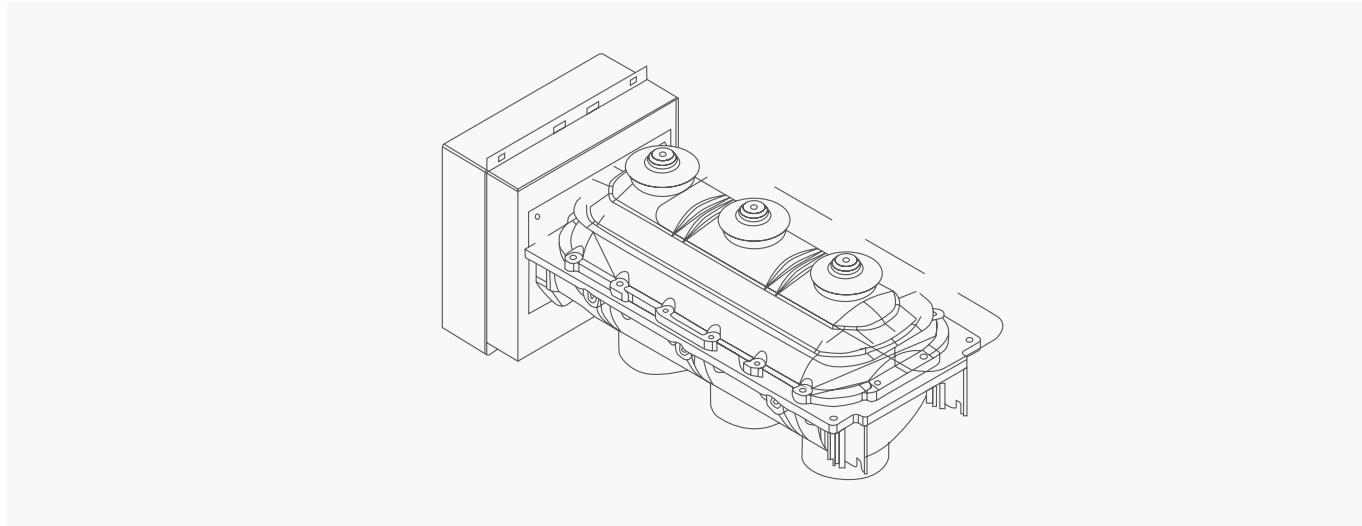


Fig 2) Whole Load break switch outline

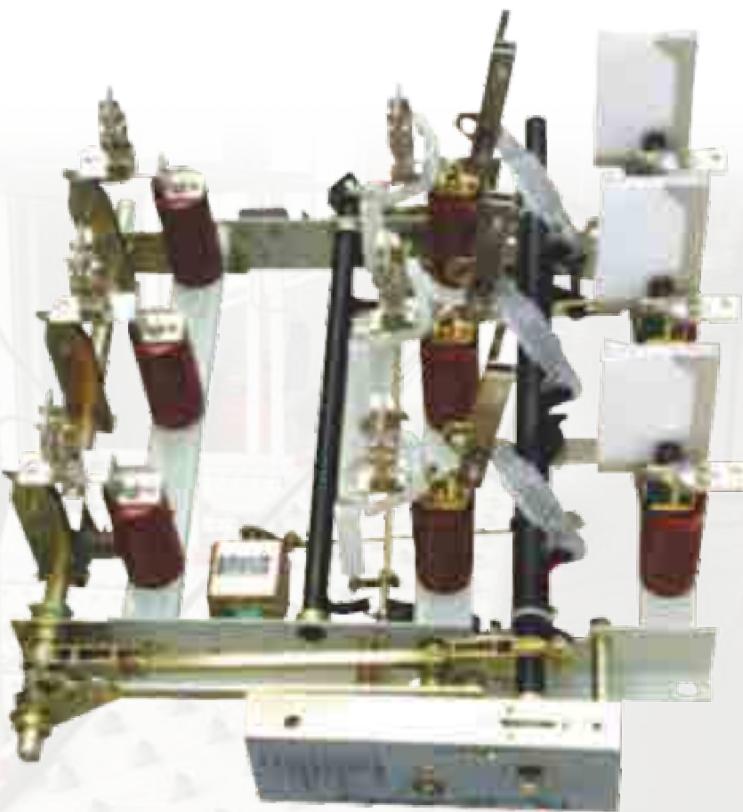


MV Load Switch

FN7-12R(L) Indoor Load Switch

- FN7-12R(L) AC MV load switch used in 50Hz, 12kV three phase AC power system.
- FN7-12R(L) series vacuum circuit breaker is indoor high voltage switch-gear with rated voltage 12kV, three-phase AC 50Hz, which is developed by introducing from Switzerland, ABB corporation technology and analyzing domestic profession development condition, productivity development manufacture product. The overall structure of this product is formed with the switch main body and operating device, uses the compound insulation structure, does not have the pollution and the explosion hazard, and the insulation level is high. This operating device of the series product is for the spring loaded type, can use the electrically operated operation, also can use the manual operation.
- Standard: IEC 60265-1, IEC 62271-105.

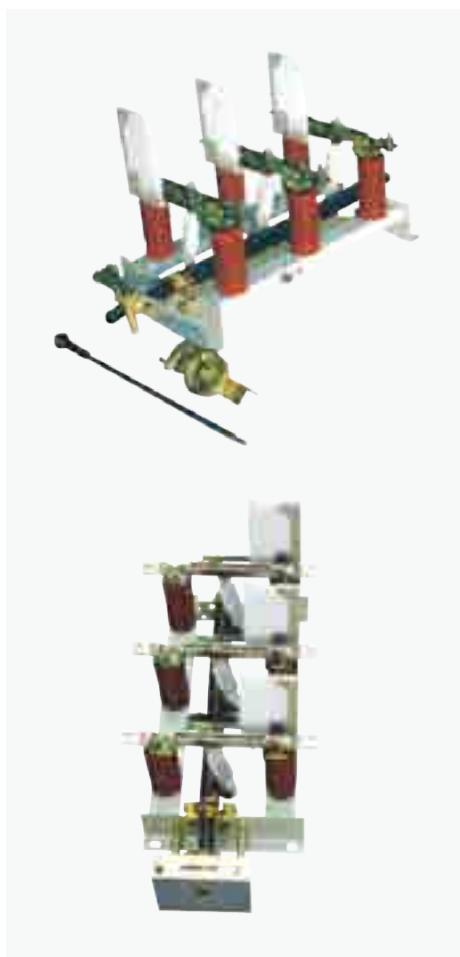
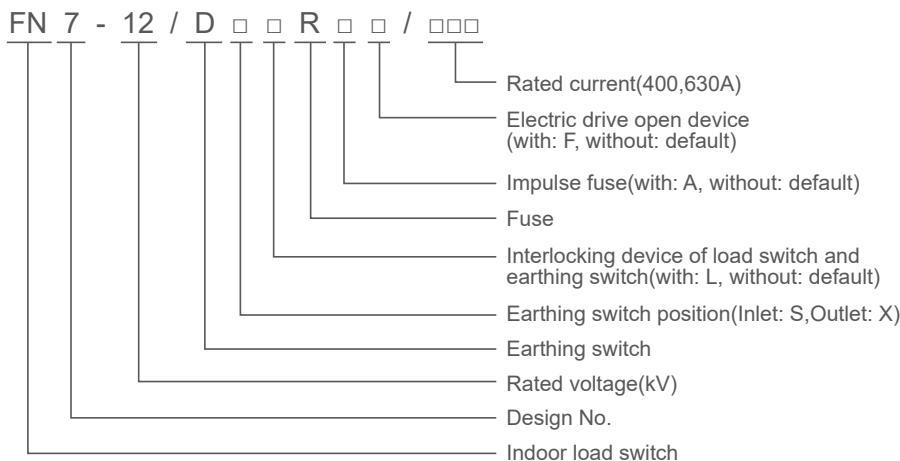
General



MV Load Switch

FN7-12R(L) Indoor Load Switch

Type designation



Technical data

Rated voltage(kV)	Highest voltage(kV)	Rated current(A)	Industrial frequency voltage withstand in 1min(kV)	4S thermal stable current (effective value) (A)
12	12	400	42/48	12.5
12	12	630	42/48	20
Active stable current (peak value)(A)	Short circuit close current (A)	Rated open current (A)	Rated transfer current (A)	
31.5	31.5	400	1000	
50	50	630	1000	

Type	Full type	DS Earthing switch at inlet position	DX Earthing switch at inlet position	L Interlocking device	R Fuse	R Impulse fuse	F Electric drive open device
Without release	FN7-12	-	-	-	-	-	-
	FN7-12DSL	△	-	△	-	-	-
	FN7-12DXL	-	△	△	-	-	-
	FN7-12R	-	-	-	△	-	-
	FN7-12DSLR	△	-	△	△	-	-
	FN7-12DXLR	-	△	△	△	-	-
With impulse release	FN7-12RAF	-	-	-	-	△	△
	FN7-12DSLRAF	△	-	△	-	△	△
	FN7-12DXLRAF		△	△	-	△	△

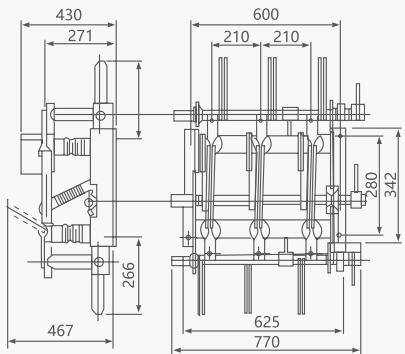
MV Load Switch

FN7-12R(L) Indoor Load Switch

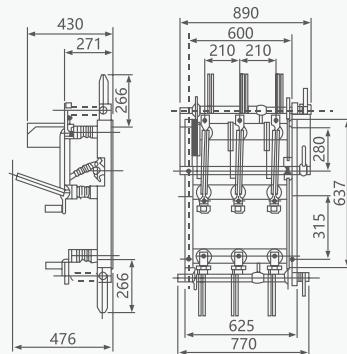
Rated data of fuse

Type	Rated voltage(kV)	Rated current(A)	Rated current of fuse link(A)
SDLA*J	12	40	6.3, 10, 16, 20, 25, 31.5, 40
SFLA*J	12	100	50, 63, 71, 80, 100
SKLA*J	12	125	125

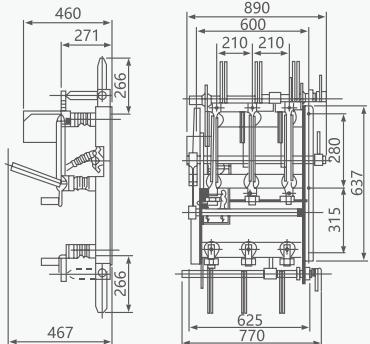
Overall and mounting dimensions(mm)



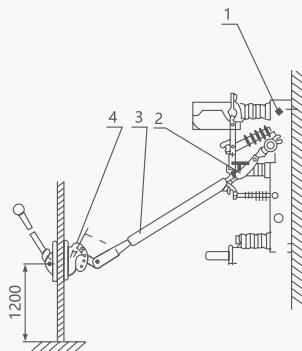
Drawing 1: Circuit load switch without tripping device



Drawing 2: Transformer protect load switch without tripping device



Drawing 3: Tripping device striking load switch



Drawing 4: Install drawing of CS6 operating device

MV Load Switch

FKN(R)12A-12 Indoor Vacuum Load Switch

- ◆ KN12A-12D pneumatic load switch and FKRN12A-12D series air compressor load switch fuse are combination apparatus; Suitable for the control and protection of power equipment such as transformers and overhead lines in three-phase distribution systems with a rated voltage of 12kV and below; Especially suitable for terminal substations and box substations in urban and rural power grids, suitable for control and protection of ring networks and dual radiation power supply unitsThe FKN12A-12D series pneumatic load switch can be used for breaking and making load current and overload current.
- ◆ FKRN12A-12D series air compressor load switch fuse combination apparatus can break and close load current,overload current and short-circuit current of the line.
- ◆ Standard: IEC 60265-1,IEC 265,IEC 420.

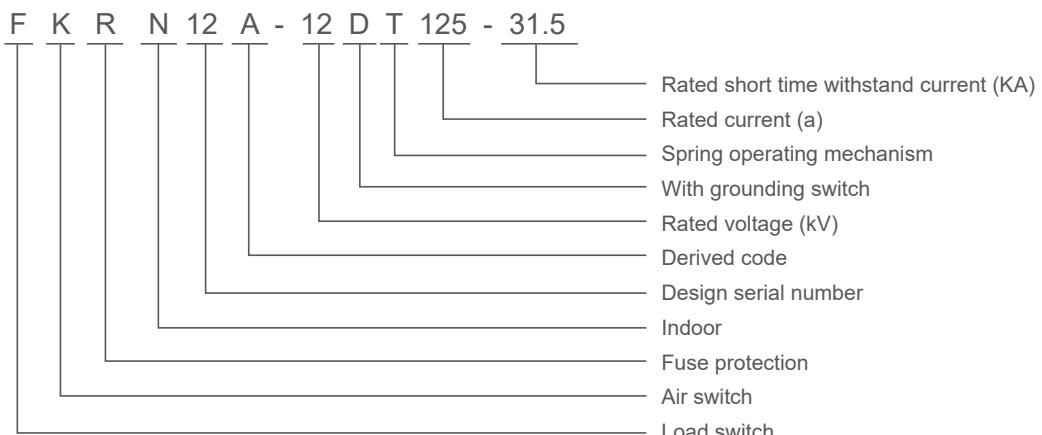
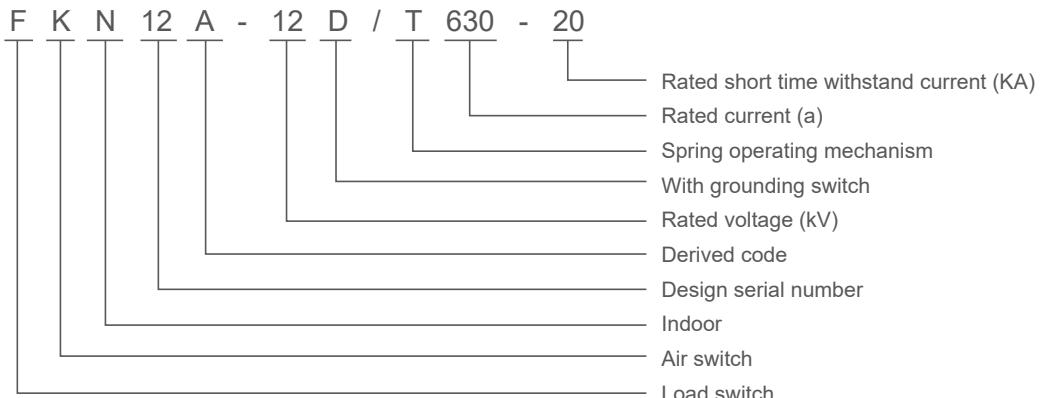
General



MV Load Switch

FKN(R)12A-12 Indoor Vacuum Load Switch

Type designation



Operating conditions

1. Ambient air temperature: upper limit + 40°C ,The lower limit is – 25°C ;
2. The altitude is not more than 1000m;
3. Relative air temperature: the target average value shall not be greater than 95%.and the monthly average value shall not be greater than 90%,
4. The seismic intensity should not exceed 8 degrees;e.
5. No fire, explosion, chemical corrosion and severe vibration places;
6. Pollution level: II

MV Load Switch

FKN(R)12A-12 Indoor Vacuum Load Switch

Technical data

Name			Company	FKN12A-12D	FKRN12A-12D	
Rated voltage			KV	12	12	
Rated frequency			Hz	50	50	
Rated current			A	630	125	
Rated insulation:level	1min power frequency withstand voltage		KV	42	42	
	Isolation fracture			48	48	
	Lightning impulse withstand voltage(peak value)			75	75	
	Isolation fracture			85	85	
Rated short time withstand current (thermally stable current)		Load switch	KA	20	/	
		Earthing switch		20	/	
Rated shortcircuit duration(thermal stability time)		Load switch	A	4	/	
		Earthing switch		2	/	
Rated short circuit making current(peak value)			KA	50	/	
Rated breaking current	Rated active load Breaking current			630	/	
	Closed loop breaking current			630	/	
	5% active load Breaking current			31.5	/	
	Cable charging breaking current			10	/	
	Switching off no-load transformer Compressor capacity			1250	/	
Rated short circuit breaking current(current limiting fuse)			KA	/	31.5	
Rated transfer current			A	/	1200	
Impactor output energy			Swcond	2000	2000	
Mechanical life			J	/	1±0.5	

Name			Company	Data	
Fracture opening distance			mm	≥175	
Center distance between phases				210±2	
Air gap between phases				≥125	
Trip				210±4	
Overtravel				41±3	
Three phase closing in different periods			ms	≤10	
Three phase opening in different periods				≤5	
Inherent opening time of shunt release				40~ 65	
Main circuit resistance			μΩ	≤130	

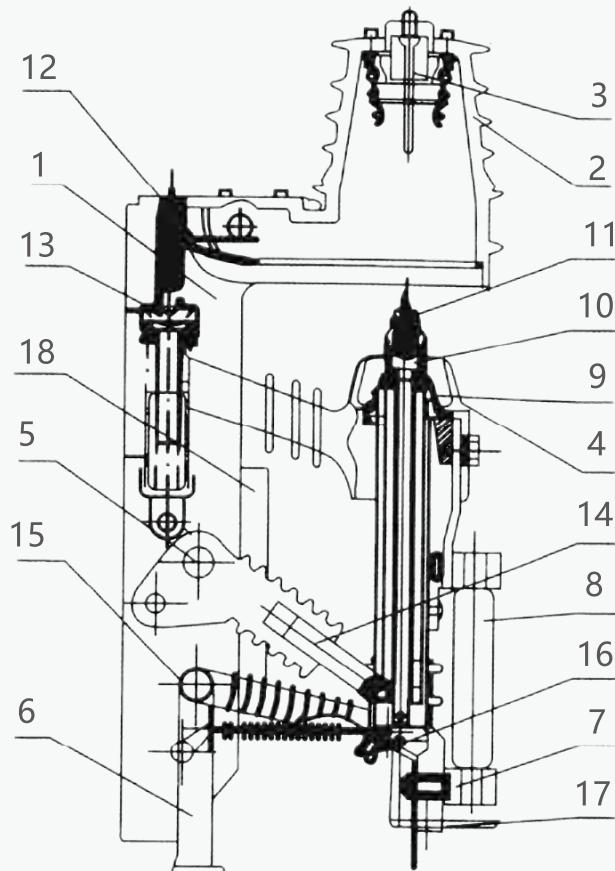
Transformer capacity (kVA)	100	125	160	200	250	300/315	400	500	630	750/800	1000	1250
Rated current of fuse(A)	16	16	16	20	25	31.5	40	50	63	80	80 100	100 125

MV Load Switch

FKN(R)12A-12 Indoor Vacuum Load Switch

Structure

The typical structure of this series of products is shown in Figure 6



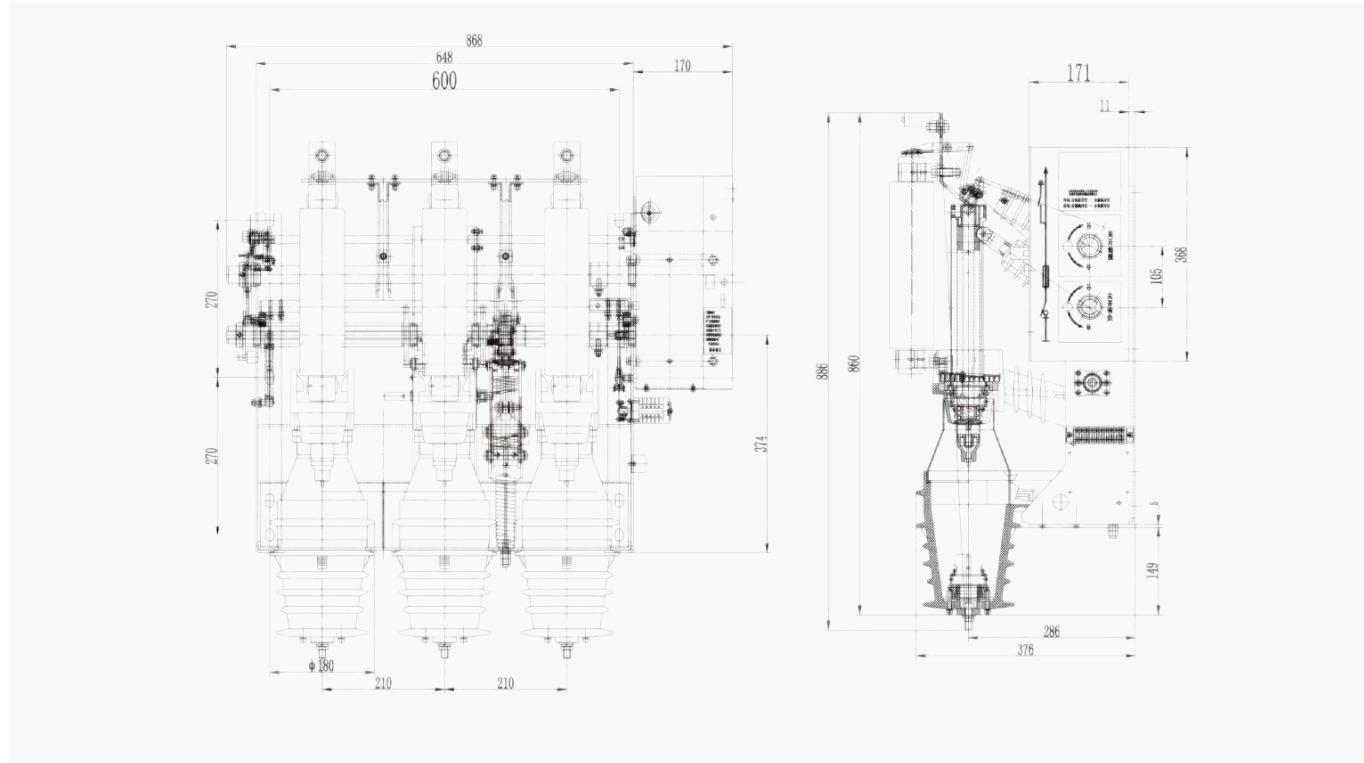
1.Rack	11.Nozzle and conductive cylinder
2.Bell jar	12.Valve (safety guard)
3.Upper contact	13.Energy storage mechanism
4.Upper support	14.Pulling rod
5.Spindle	15.Supporting arm
6.Grounding knife	16.Grounding clamp
7.Fuse card	17.Snap off plate
8.Fuse	18.Operating interlocking compone
9.Lower contact	
10.Piston	

MV Load Switch

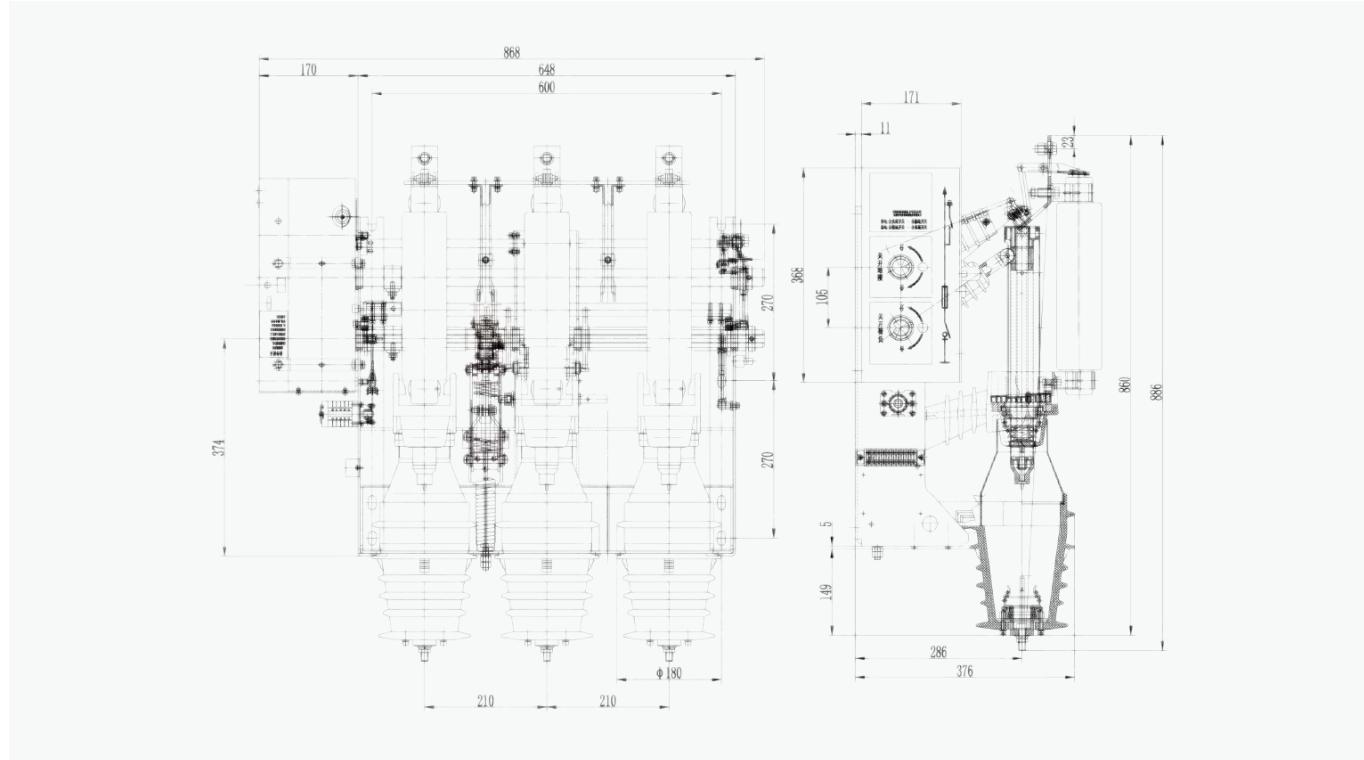
FKN(R)12A-12 Indoor Vacuum Load Switch

Overall and mounting dimensions(mm)

New FKN12 installation size formal installation(Inverted Right)



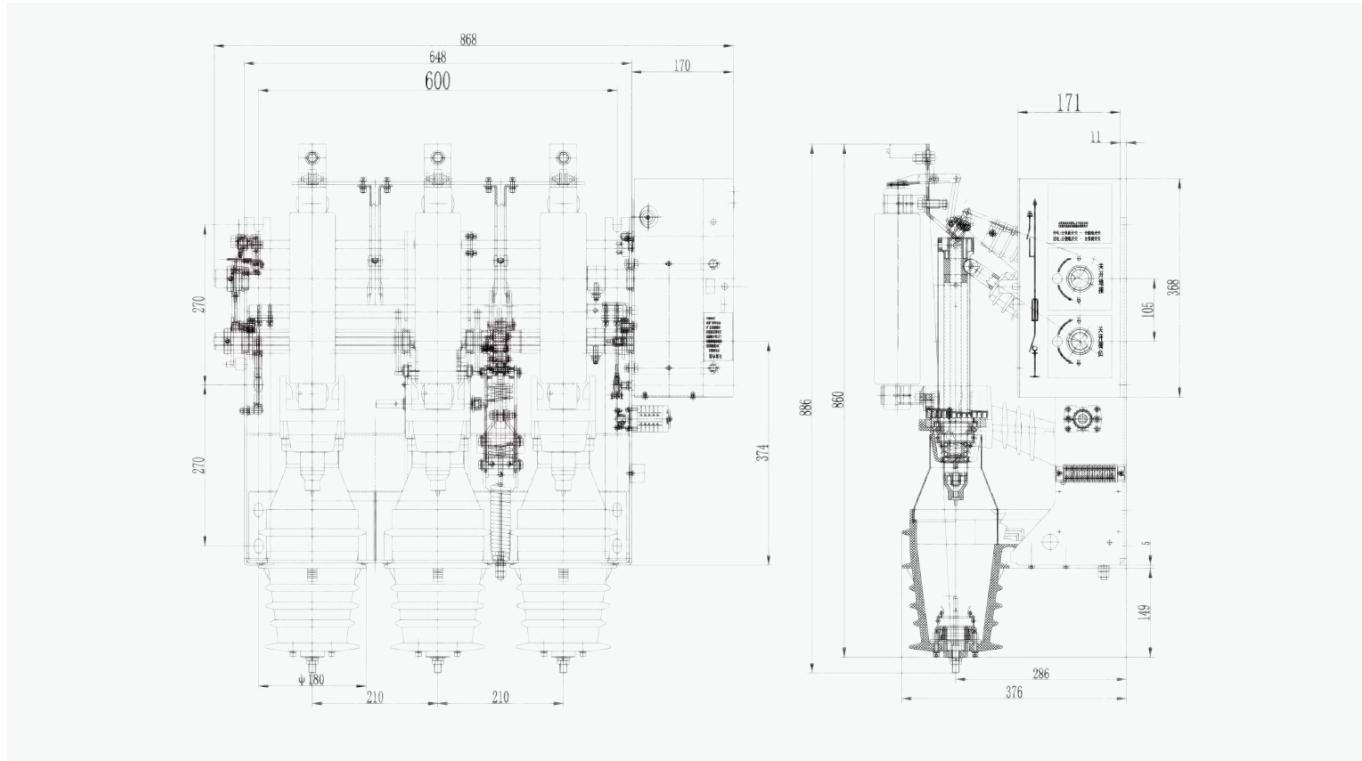
New FKN12 installation size formal installation(Inverted Left)



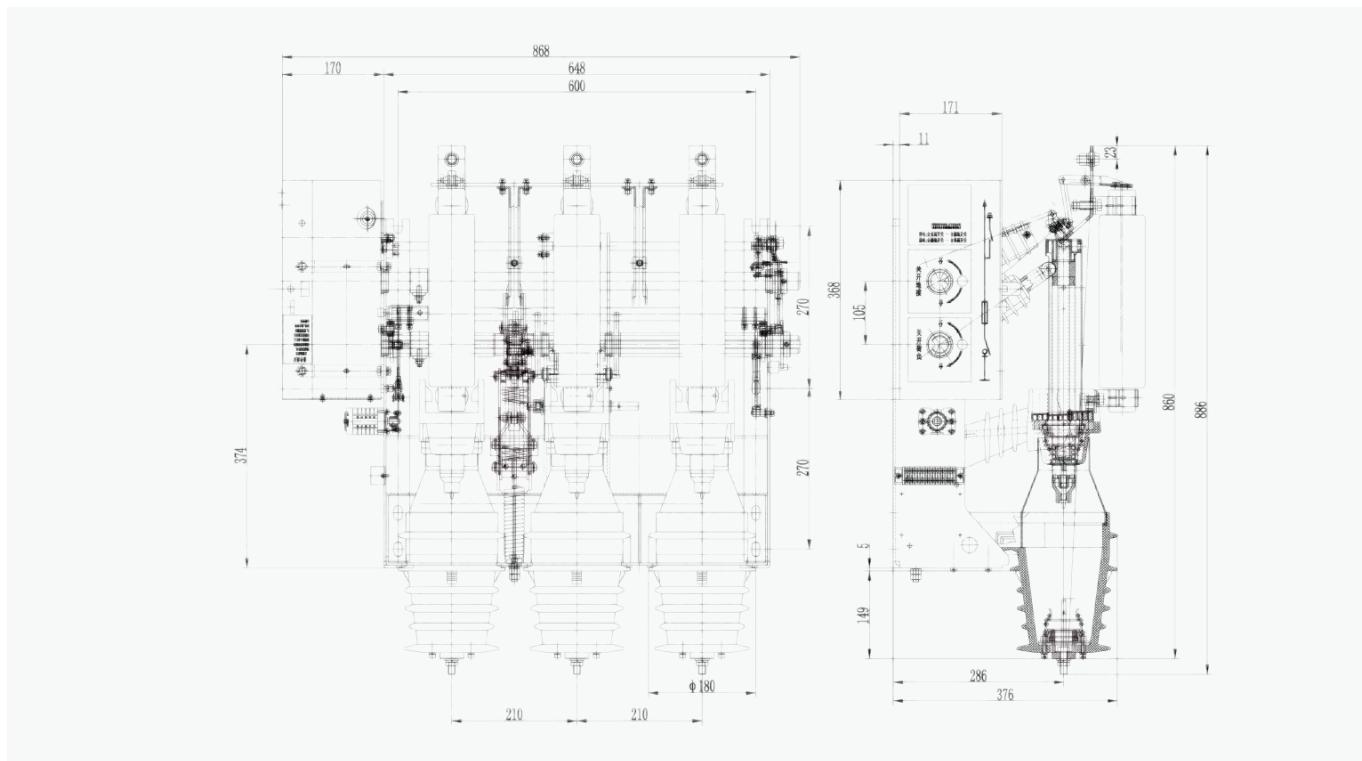
MV Load Switch

FKN(R)12A-12 Indoor Vacuum Load Switch

New FKN12 Installation Size Inversion(Inverted Right)



New FKN12 Installation Size Inversion(Inverted Left)

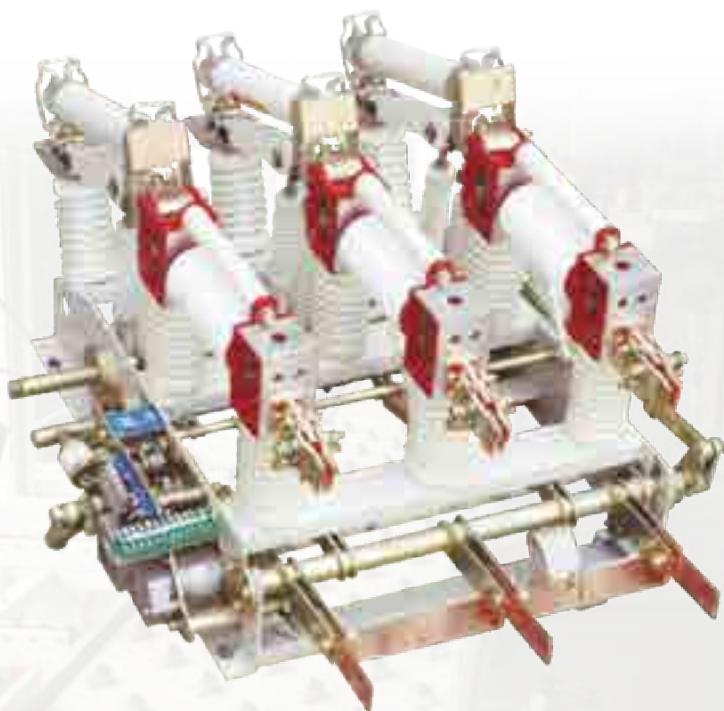


MV Load Switch

FZ(R)N21-12 Indoor Vacuum Load Switch

- FZ(R)N21-12D indoor MV vacuum load switch and composite apparatus, used for circuit AC 50Hz, rated voltage 12kV, plays power distribution, control and protection of electrical equipment function. It can replace the expensive circuit breaker in a certain range, thus saving the power grid investment costs. The combination of electrical appliances can be widely used in the ring network power supply system in urban and rural areas. Under normal operation condition, it can close, bear and break rated current, also can break the specified short-circuit current under abnormal conditions, especially suitable for the control and distribution and protection of transformer.
- Standard: IEC 60265-1, IEC 62271-105.

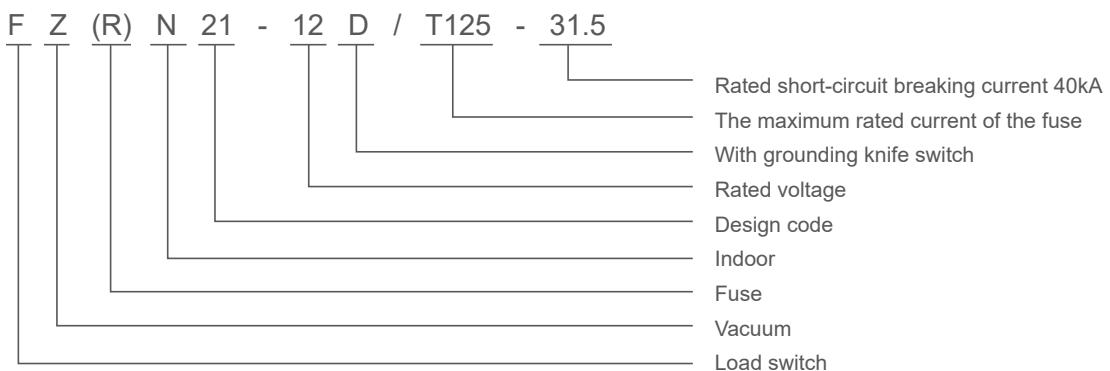
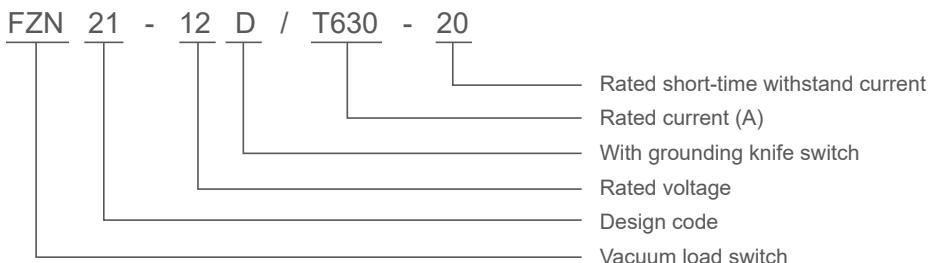
General



MV Load Switch

FZ(R)N21-12 Indoor Vacuum Load Switch

Type designation



Operating conditions

1. Altitude: no more than 1000m;
2. The environment temperature: upper limit +40°C, lower limit -30°C;
3. Relative humidity: daily average value is not greater than 95%, monthly average is not greater than 90%;
4. 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;
5. No severe vibration, no corrosive gas, no fire, no explosion danger place.

MV Load Switch

FZ(R)N21-12 Indoor Vacuum Load Switch

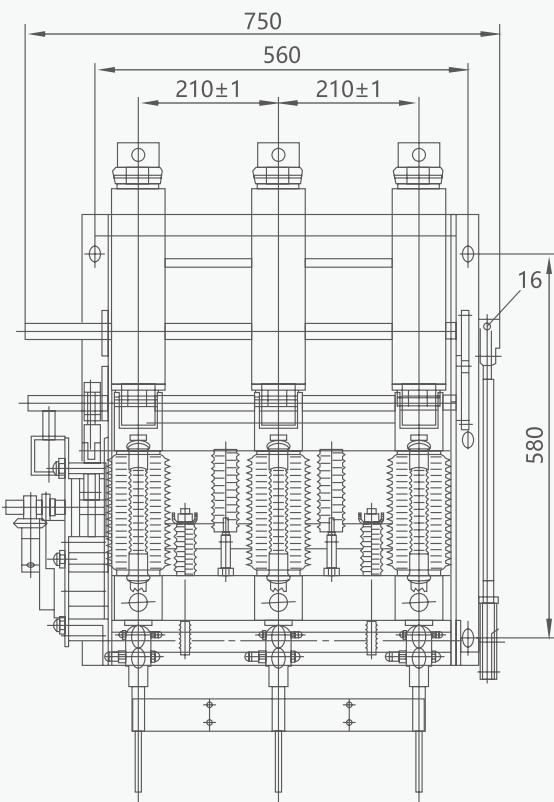
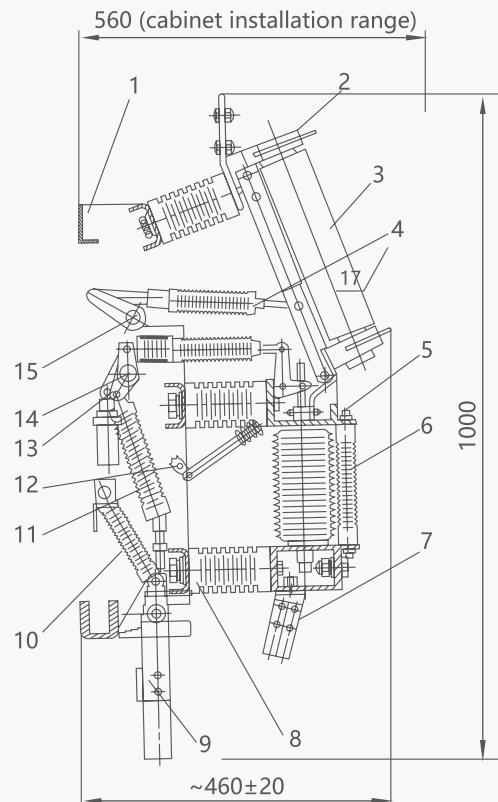
Technical data

Item	Unit	Parameter
Technical parameter of combinations		
Rated voltage	kV	12
Rated frequency	Hz	50
The maximum rated current of the fuse	A	125
Transfer current	A	1550
The fuse triggered switch segment time	ms	40±5
Rated short-circuit breaking current	kA	31.5
Rated short-circuit closing current (prospective peak value)	kA	80
1min power frequency withstand voltage (vacuum fracture, interphase, phase to earth / isolation fracture)	kV	42/49
The lightning impulse withstand voltage (vacuum fracture, interphase, phase to earth / isolation fracture)	kV	75/85
Fuse impinger type		Medium-sized
Technical parameters of vacuum load switch of combined electrical appliance		
Rated voltage	kV	12
Rated frequency	Hz	50
Rated current	A	630
Rated active load breaking current	A	630
Rated close loop breaking current	A	630
5% at rated load breaking current	A	31.5
Rated cable charging breaking current	A	10
Interrupting no load transformer capacity	kVA	1250
1min power frequency withstand voltage (vacuum fracture, interphase, phase to earth / isolation fracture)	kV	42/48
The lightning impulse withstand voltage (vacuum fracture, interphase, phase to earth / isolation fracture)	kV	75/85
4s rated short-time withstand current	kA	31.5
Rated peak withstand current	kA	80
Rated short-circuit closing current	kA	80
Mechanical life	Times	10000
Allowable cumulative thickness wear in contact	mm	2
Opening and closing operating torque	N·m	≤200
Mechanical life	/	1±0.5

MV Load Switch

FZ(R)N21-12 Indoor Vacuum Load Switch

Overall and mounting dimensions(mm)



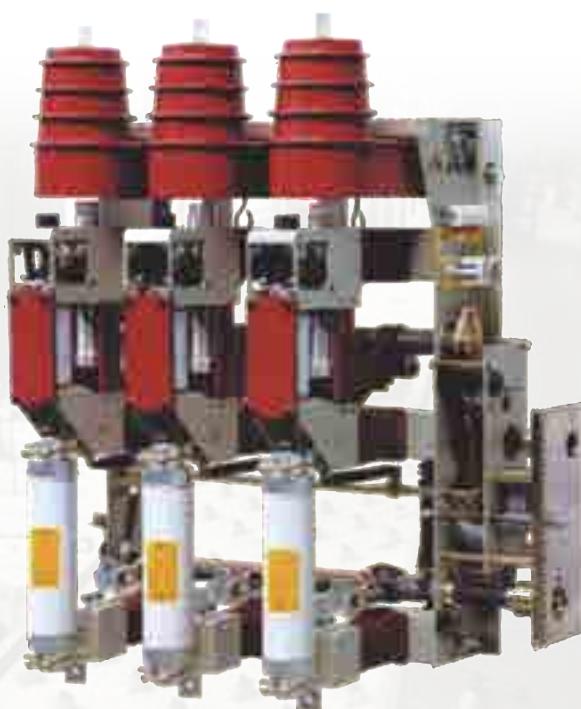
1. Cabinet bracket	7. Static contact	13. Insulated tension pole
2. Disconnect	8. Insulator	14. Main axle
3. Fuse	9. Grounding knife	15. Layshaft
4. Insulated tension pole	10. Grounding knife spring	16. Adjusting yoke
5. Upper bracket	11. Opening spring	17. Spring operating mechanism
6. Vacuum interrupter	12. The tripping driving device	

MV Load Switch

FZ(R)N25-12 Indoor Vacuum Load Switch

- ◆ FZN25, FZRN25 vacuum load switch and composite apparatus, suitable for three-phase AC 50Hz ring network or terminal power supply and industrial electrical equipment, for load control and short circuit protection use, load switch open and close the closed loop current, no-load transformer and cable charging current, composite apparatus can break any current till rated short circuit current.
- ◆ Adopt the straight move or isolating fracture and vacuum interrupter linkage. With function of manual and electric operation.
- ◆ FZN25, FZRN25 special transmission structure design, arc extinguish chamber only withstand voltage in the moment of closing and breaking, small size, low price.
- ◆ FZN25, FZRN25 can realize isolation fracture and arc extinguish chamber fracture disposable operating.
- ◆ FZN25, FZRN25 has a grounding switch mutual linkage grounding valve between the static contact and movable conductive cylinder, ensures safety and convenient maintenance.
- ◆ Standard: IEC 60265-1, IEC 62271-105.

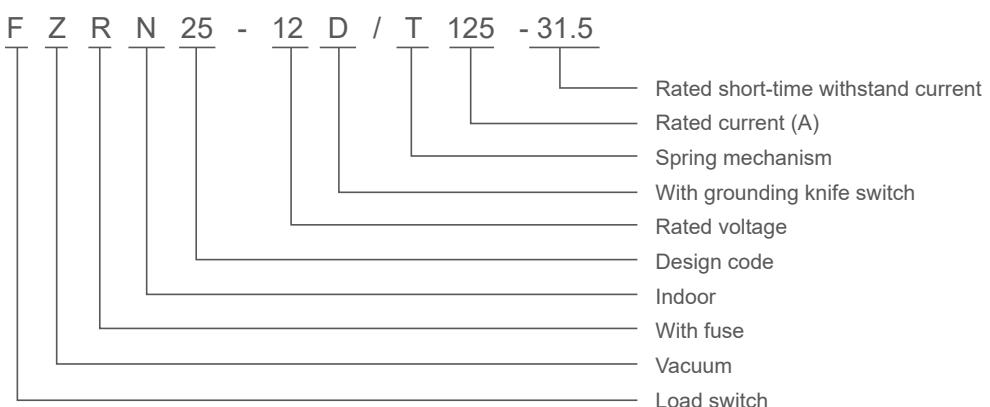
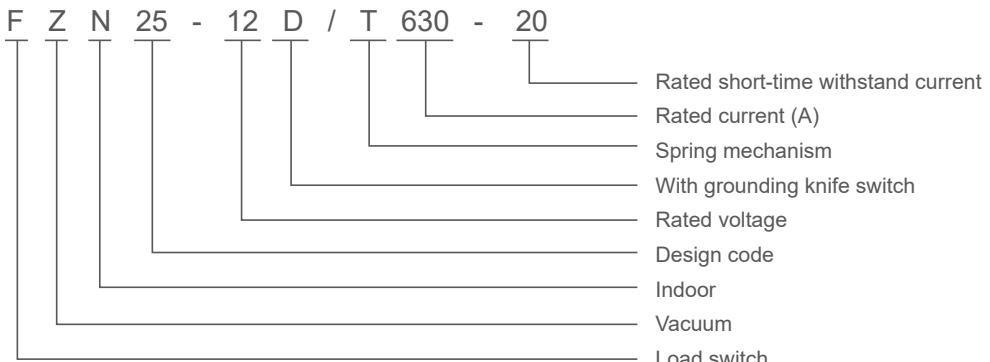
General



MV Load Switch

FZ(R)N25-12 Indoor Vacuum Load Switch

Type designation



Operating conditions

1. Ambient air temperature: upper limit +40°C, lower limit -25°C (allow storage at -30°C), 24h average value is not higher than +35°C;
2. Altitude: no more than 1000m;
3. Relative humidity: daily average value is not greater than 95%, monthly average is not greater than 90%;
4. Earthquake intensity: do not exceed 8 degree;
5. The surrounding air is not corrosive and flammable gas, steam and other significant pollution;
6. No regular violent vibration;
7. Contamination grade: II class;

MV Load Switch

FZ(R)N25-12 Indoor Vacuum Load Switch

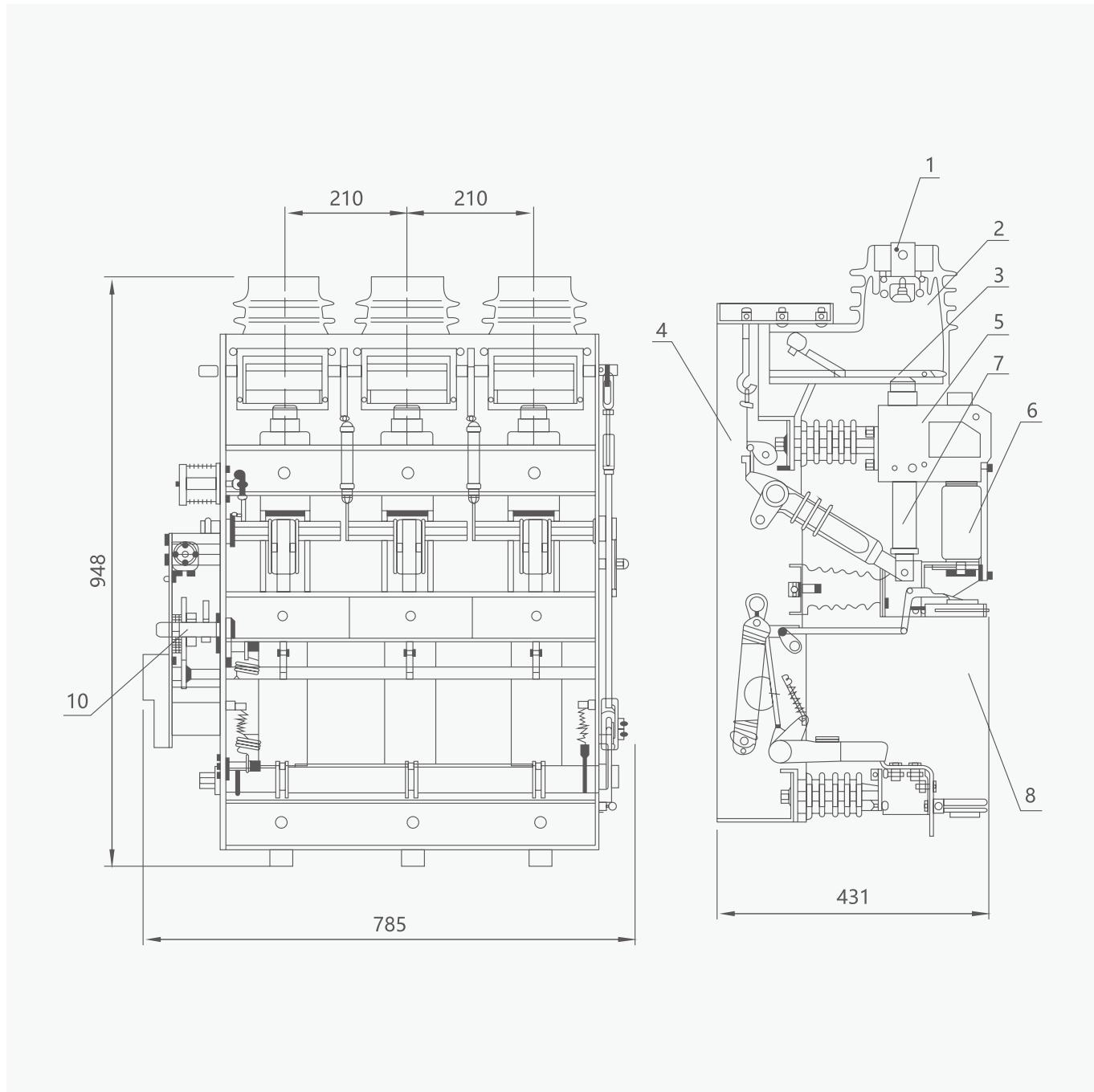
Technical data

Item	Unit	FZN25-12D/T630-20	FZRN25-12D/T125-20
Voltage, current parameters			
Rated voltage	kV	12	
Rated frequency	Hz	50	
Rated current	A	630	125
Rated short time power frequency withstand voltage (1min)	kV	Interrupter fracture 30; phase to earth 42; isolation fracture 48	
Rated lightning impulse withstand voltage (peak)	kV	Phase to earth 75;isolation fracture 85	
Rated peak withstand current	kA	50	-
4s rated short-time withstand current	kA	20	-
Rated active load breaking current	A	630	-
Rated loop breaking current	A	630	-
Rated cable charging breaking current	A	10	-
Interrupting no load transformer capacity	kVA	1250	-
Rated short-circuit breaking current	kA	-	31.5
Rated transfer current, rated AC current	A	-	2000
Fuse type			SDLAJ-12 SFLAJ-12
The impactor energy output	J		2-5 (medium)
Rated short-circuit closing current	kA		50
Grounding switch rated stability current	kA		50
Grounding switch 2S thermal stability current	kA		20
The auxiliary circuit rated voltage	V		$\cong 220/110$
Mechanical life	Times	/	1±0.5

MV Load Switch

FZ(R)N25-12 Indoor Vacuum Load Switch

Outline and mounting dimensions



MV Load Switch

FZW28-12F Indoor Vacuum Load Switch

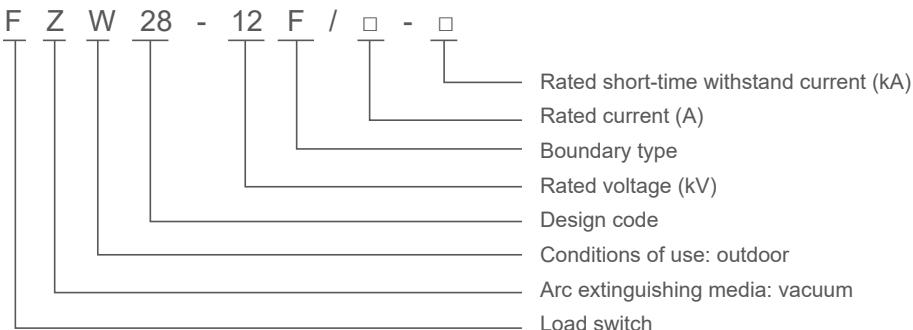
- The FZW28-12 outdoor sectionalizer vacuum load switch is equipped with fault detection, protection, control, and communication functions that can autonomously isolate single-phase grounding faults and automatically isolate phase-to-phase short-circuit faults. It is suitable for the incoming end or user end of 10kV distribution lines and can also be used at other branching line connections that meet the requirement

General



FZW28-12F Indoor Vacuum Load Switch

Type designation



Operating conditions

1. Altitude: ≤ 2000 meters;
2. Environment temperature: $-40^{\circ}\text{C} \sim +85^{\circ}\text{C}$;
3. Relative humidity: $\leq 90\%$ (25°C);
4. The maximum daily temperature difference: 25°C ;
5. Protection grade: IP67;
6. The maximum ice thickness: 10mm.



FZW28-12F

MV Load Switch

FZW28-12F Indoor Vacuum Load Switch

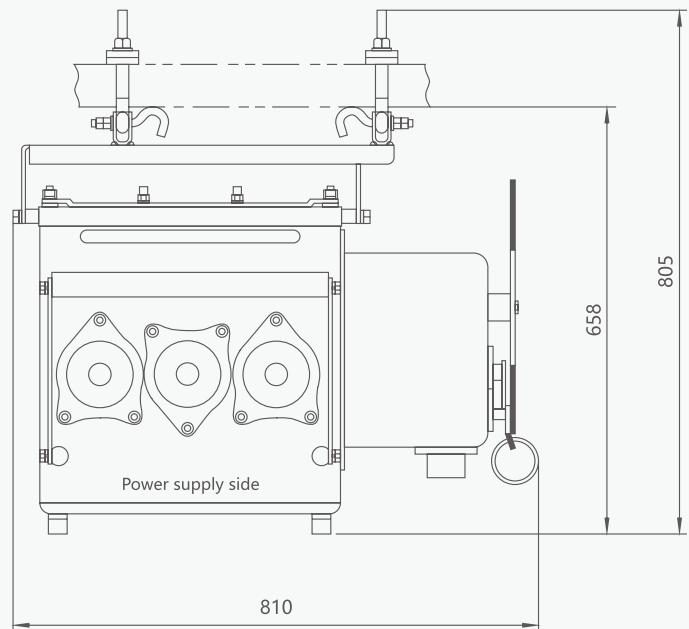
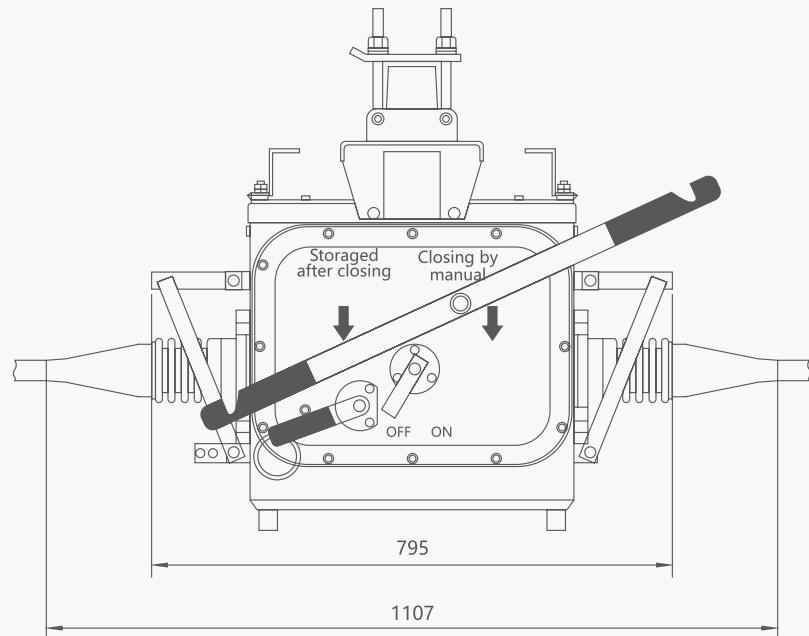
Technical data

Item	Unit	Parameter
The switch body		
Rated voltage	kV	12
Power frequency insulation withstand voltage (Interphase and phase to ground / fracture)	kV	42/48
Lightning impulse withstand voltage (Interphase and phase to ground / fracture)	kV	75/85 (peak)
Rated current	A	630
Rated short-time withstand current	kA	20
Rated thermal stability time	s	2
Rated short-circuit close current (peak)	kA	40
Rated dynamic stability current (peak)	kA	40
Rated cable charging breaking current	A	20
Rated switching unloaded transformer inductor current	A	<5
Mechanical life	Times	10000
Measurement and control unit		
Type		FDR-100
Input voltage		AC220±20%
Input voltage frequency	Hz	50
The output voltage (opening operation)		DC48V
Interphase short-circuit protection setting current value		0.2-1.0 adjustable
Grounding protection of zero sequence current setting value		10-200mA adjustable
Grounding protection action time setting value		0-10s adjustable
Setting value permitted error		±5%
Insulation resistance (external terminal to ground / input terminal to output terminal)		>100MΩ/DC500V
Power frequency withstand voltage (ibid.)		2000V/1min
Impulse withstand voltage (ibid.)		5000V, 1.2/50μs The positive and negative three times each

MV Load Switch

FZW28-12F Indoor Vacuum Load Switch

Outline and mounting dimensions



MV Load Switch

FZW32-12 ~40.5 Outdoor Vacuum Load Switch

- FZW32-12 (40.5) outdoor MV isolating vacuum load switch is a new type of load switch which is the integration of mature experience of domestic existing load switch and advanced technology design of external. This load switch is composed of isolating switch, vacuum interrupter and operating mechanism and other parts. By using the principle of vacuum interrupter, with strong arcing ability, reliable performance, long service life, small volume, no explosion danger, no pollution etc advantage. The product can be used in transmission and distribution system of electric power, metallurgy, mine, chemical industry and other departments as control equipment, especially suitable for frequent operation place.

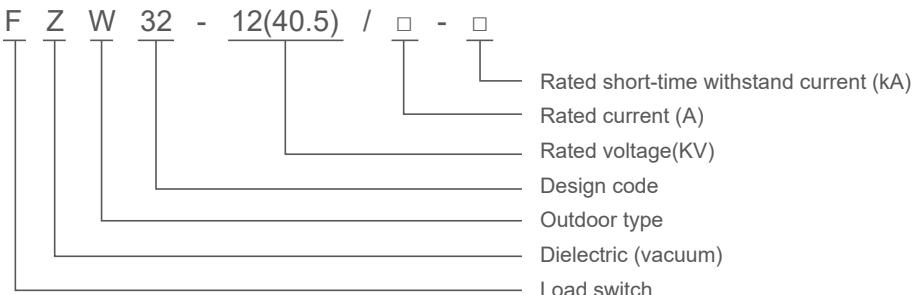
General



MV Load Switch

FZW32-12 ~40.5 Outdoor Vacuum Load Switch

Type designation



Features

FZW32-12 (40.5) type outdoor high voltage isolating vacuum load switch adopts the vacuum arc extinguish chamber, no explosion danger, no maintenance. The load switch isolation knife linkage with a three-phase vacuum interrupter, breaking and closing operation in good same period, and with reliable isolation fracture when breaking, namely has the function of isolation switch. Most of the switch body parts are made of stainless steel materials, the base frame is made by stainless steel materials or hot dip galvanizing and UV protection coating processing material, can effectively prevent corrosion and rusting, ensure the normal operation in the outdoor environment. Switch knife with a pressure spring, ensure that contact with sufficient contact pressure, such not only convenient operation, and can guarantee the reliability of switching.

The isolating fracture and arc fracture of the load switch are in parallel during the opening and closing process, the arc fracture as arc, does not bear the load current task, while the isolation fracture only undertake the load current and short circuit closing task, not to participate in the arc, which not only simplifies the arc structure, and the whole structure of switch simple, stable performance; installation and operation convenient and reliable, long service life. It is a kind of economic, ideal outdoor switchgear.

The handle hook rod actuator; the operating handle is mounted on the load switch spindle end, and fastened by nuts, both ends of the handle are marked with "opening", "closing" instructions, the operator may according to need to use hook rod to hook the end of "opening" or "closing", to make the spindle rotate, spring past middle mechanism drive the isolation knife assembly and vacuum interrupter actuator motion, namely realize the switch breaking and closing. (this applies to 12kV)

Under rod mechanism operating; the load switch is installed at the upper part of the wire rod, operating mechanism is arranged in the lower part, ensure that the handle keep away from the ground not more than 1100mm, if the operation of connecting rod is more than three meters should add support guide in the middle of rod. (operating mechanism and guide support as the product accessories supply to the user) (this applies to 12kV)

Electric operation (this applies to 12kV/40.5kV)

Operating conditions

1. Ambient temperature: upper limit +40°C, lower limit -30°C; Days difference does not exceed 32K;
2. Altitude: 1000m and the following areas;
3. Wind pressure: no more than 700Pa (corresponding to the wind speed 34m/s);
4. Air pollution level: IV class
5. Earthquake intensity: do not exceed 8 degree;
6. Ice thickness: no more than 10mm.

MV Load Switch

FZW32-12 ~40.5 Outdoor Vacuum Load Switch

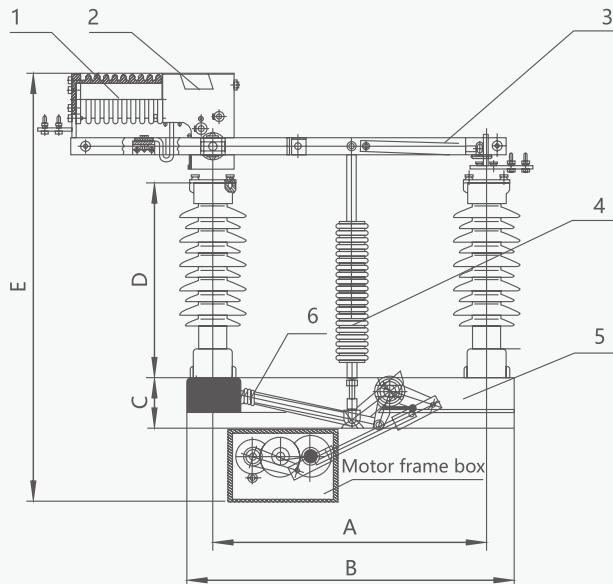
Technical data

Item	Unit	Parameter			
Load switch main technical parameters and mechanical properties					
Rated voltage	kV	12	40.5		
Rated current	A	630	1250		
Rated frequency	Hz	50	50		
Rated peak withstand current	kA	50	63		
Rated short-time withstand current	kA	20	25		
Rated short-time withstand current duration	s	4	4		
Rated active load breaking current	A	630	1250		
Rated closed loop breaking time	A	630	1250		
Rated cable charging breaking current	A	10	10		
5% at rated active load breaking current	A	31.5	63		
Rated no-load transformer breaking current rated capacity	kVA	1250	1250		
Rated short-circuit closing current	kA	50	63		
The main circuit of electronic	kV	≤150	≤100		
1min power frequency withstand voltage(RMS)	Dry test	Between poles and poles to the ground	kV	42	95
	Wet test	Isolating fracture	kV	48	110
		Between poles and poles to the ground	kV	30	85
Lightning impulse withstand voltage (peak)	Between poles and poles to the ground		kV	75	185
	Isolating fracture		kV	85	215
Mechanical life	Times	10000	10000		
Three-phase, switching in different period	ms	≤5	≤5		
The contact blade just close position deviation	mm	≤2	≤2		
The main contact blade pressure	N	300±30	450±50		
The contact blade distance	mm	≥180	≥380		
Manual operating torque	Nm	≤200	≤300		
Load switch vacuum arc extinguishing chamber assembly and adjustment technology					
Open clearance between contacts	mm	5±1	18±1		
Average opening speed	m/s	1.1±0.2	1.6±0.2		
Three phase opening different period	ms	≤5	≤5		
Three phase closing different period	ms	≤5	≤5		
Distance between the charged body and the pole to ground	mm	>200	>380		

MV Load Switch

FZW32-12 ~40.5 Outdoor Vacuum Load Switch

Overall and mounting dimensions(mm)



- 1. The vacuum interrupter assembly
- 2. The opening spring
- 3. The isolation knife assembly
- 4. Insulated tension pole
- 5. Base
- 6. Spring past middle

Model specification	Main dimensions (mm)				
	A	B	C	D	E
FZW32-12/630-20	400	480	80	220	755
FZW32-40.5/1250-25	770	920	100	560	1236

MV Isolation Switch



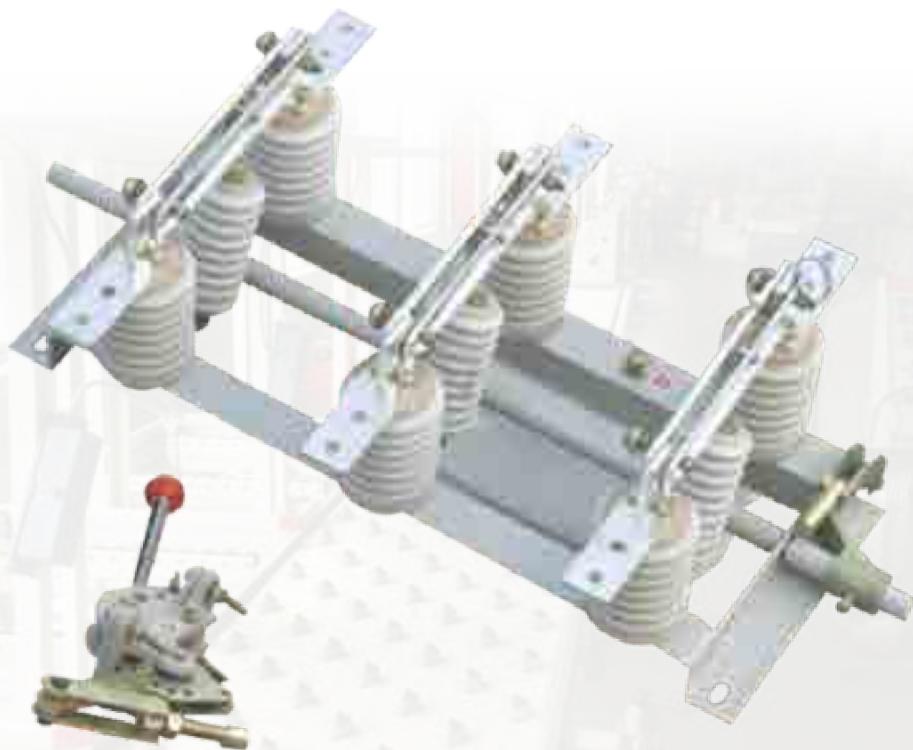
CNC
ELECTRIC

MV Isolation Switch

GN19-12 Indoor Isolation Switch

- GN19-12 indoor MV isolation switch series MV switch equipment used for rated voltage 10kV, AC 50Hz and below power system, equipped with CS6-1 type manual operating mechanism, open, close the circuit in the case of no load, voltaged. There are derivatives such as anti pollution, high prototype and added charged display device type, etc.

General



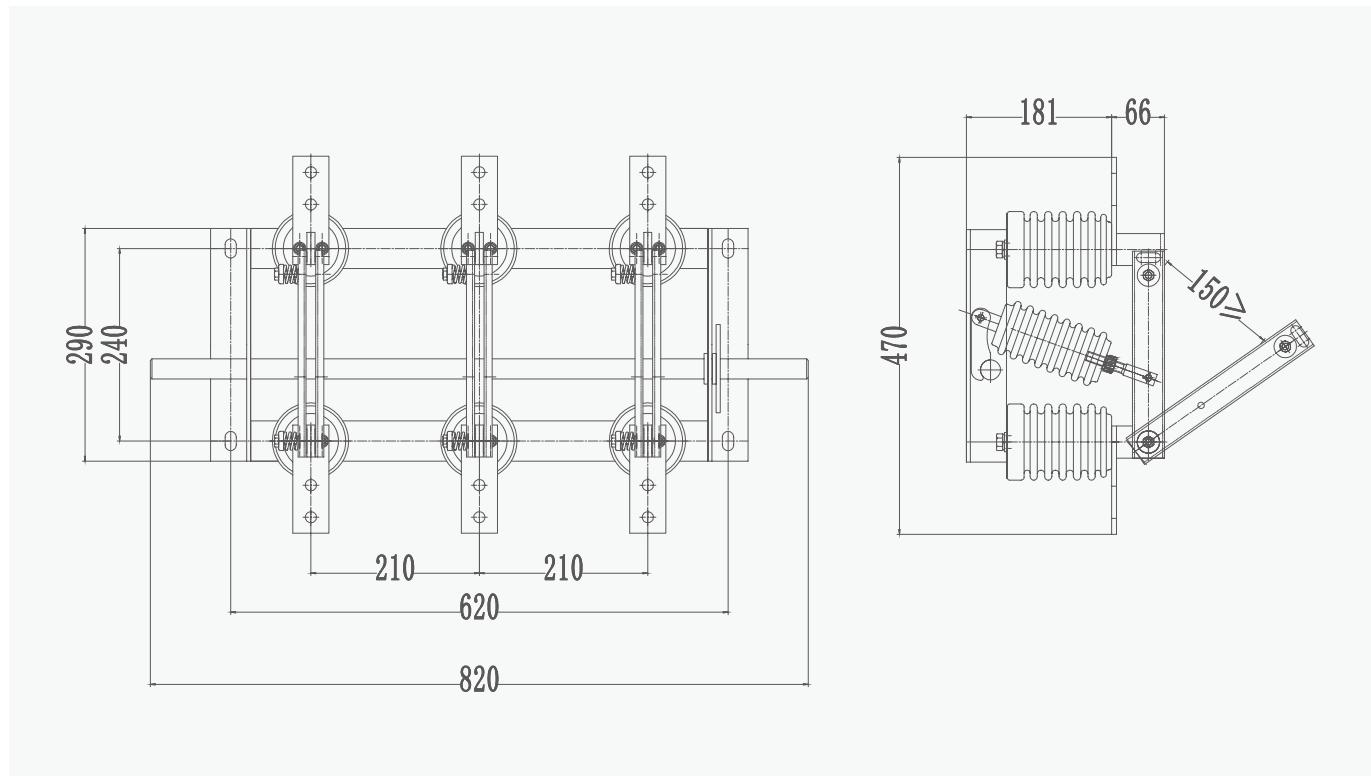
MV Isolation Switch

GN19-12 Indoor Isolation Switch

Technical data

Model	Rated voltage (kV)	Maximum voltage (kV)	Maximum current (A)	4S thermal stability current (kV)	Dynamic stability current (kV)
GN19-10(C)400-12.5	10	11.5	400	12.5	31.5
GN19-10(C)630-20	10	11.5	630	20	50
GN19-10(C)1000-31.5	10	11.5	1000	31.5	80
GN19-10(C)1250-40	10	11.5	1250	40	100

Overall and mounting dimensions(mm)

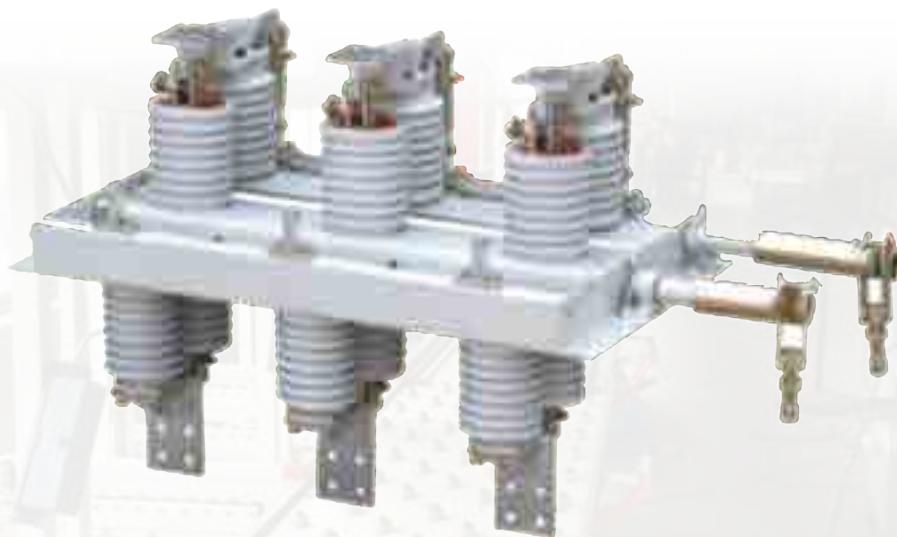


MV Isolation Switch

GN30-12 Indoor Isolation Switch

- GN30-12 (D) rotary indoor MV isolating switch is a new type isolation switch of rotary knife type, the main structure is fixed two groups of insulator and contact on the two plane of three-phase chassis, through the rotary contact, realize the switch on-off.
- GN30-12 (D) switch is a new type added grounding knife on the GN30-12 type switch basis, which can meet the needs of different power systems.
- The product design is with compact, small occupied space, strong insulating ability, easy installation and adjustment, its performance meets the GB1985-89 "AC high voltage isolating switch and the grounding switch" requirements, applicable to the rated voltage 10kV AC 50Hz and below indoor power system, to open and close the circuit when voltaged, no load. It can be used with the high voltage switch cabinet, and also can be used separately.

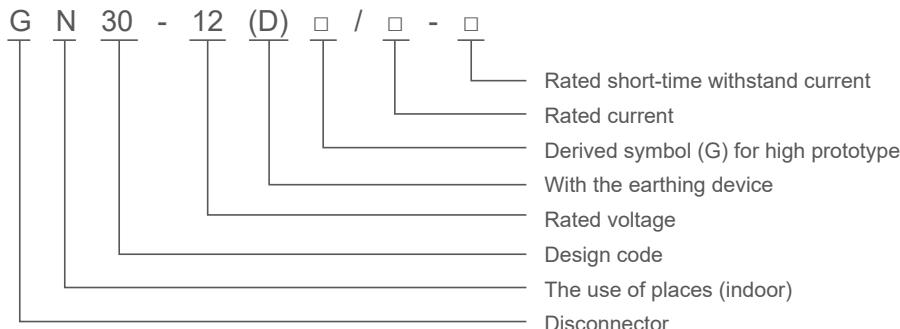
General



MV Isolation Switch

GN30-12 Indoor Isolation Switch

Type designation



Operating conditions

1. The altitude does not exceed 1000m;
2. Ambient air temperature: -10 °C ~+40 °C;
3. Relative humidity: daily average value is not greater than 95%, monthly average value is not greater than 90%;
4. Contamination grades: no serious dust, corrosive and explosive material place;
5. Earthquake intensity: do not exceed 8 degree; No regular violent vibration place.



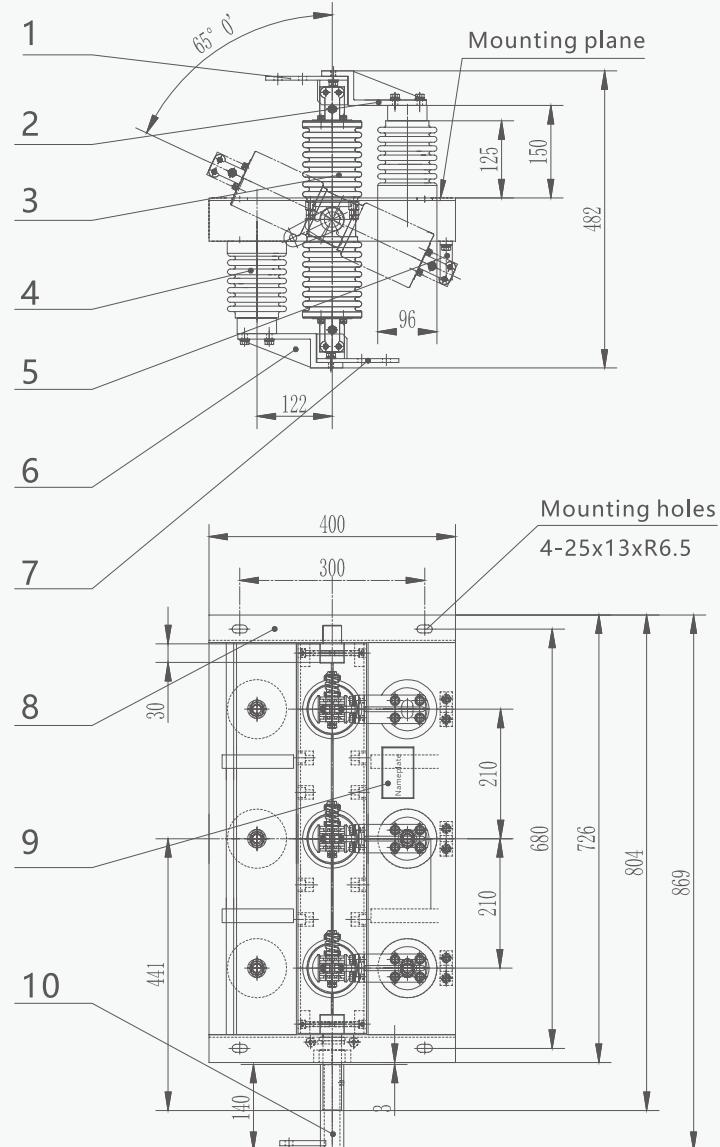
Technical data

Parameter	Product specifications		GN30-12/ 400-12.5	GN30-12/ 630-12.5	GN30-12/ 1000-12.5	GN30-12/ 1250-12.5	GN30-12/ 1600-12.5
	Item		GN30-12D/ 400-12.5	GN30-12D/ 630-12.5	GN30-12D/ 1000-12.5	GN30-12D/ 1250-12.5	GN30-12D/ 1600-12.5
Voltage, current parameters							
Rated voltage (kV)					12		
Rated current (A)		400	630	1000	1250	1600~3150	
Rated short-time withstand current (kA)		12.5	20	31.5	31.5	40	
Rated short-time duration (S)		4	4	4	4	4	
Rated peak withstand current (KA)		31.5	50	80	80	100	
Rated insulation level	1 min power frequency withstand voltage (kV)		Between pole, pole to earth 42 fracture 48				
	Lightning impulse voltage (kV)		Between pole, pole to earth 75 fracture 85				

MV Isolation Switch

GN19-12 Indoor Isolation Switch

Overall and mounting dimensions(mm)



1. Vertical incoming contact	6. Parallel contact support
2. Vertical contact support	7. Parallel outgoing contact
3. Rotating moving contact	8. Rack
4. Insulator	9. Nameplate
5. Grounding contact	10. Opening and closing crank arm

Notes

Outline and installation dimensions of isolation switches on a distance of 210mm The incoming and outgoing line methods are: parallel incoming line and parallel outgoing line:

MV Isolation Switch

GW9 Outdoor Isolation Switch

- The "GW9-10G" of outdoor MV isolator switch is the high voltage switch equipment of single phase AC50Hz. The product is suitable for power system with rated voltage 10KV to make or break power supply under circumstances of with voltage and nomload.
- The isolator adopts isolated rod to operate.
- Standard:IEC 60129

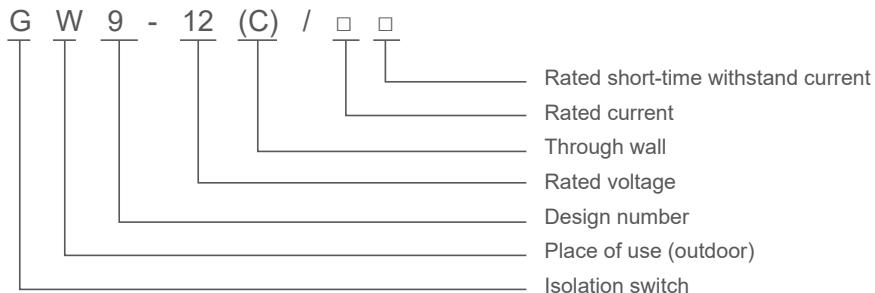
General



MV Isolation Switch

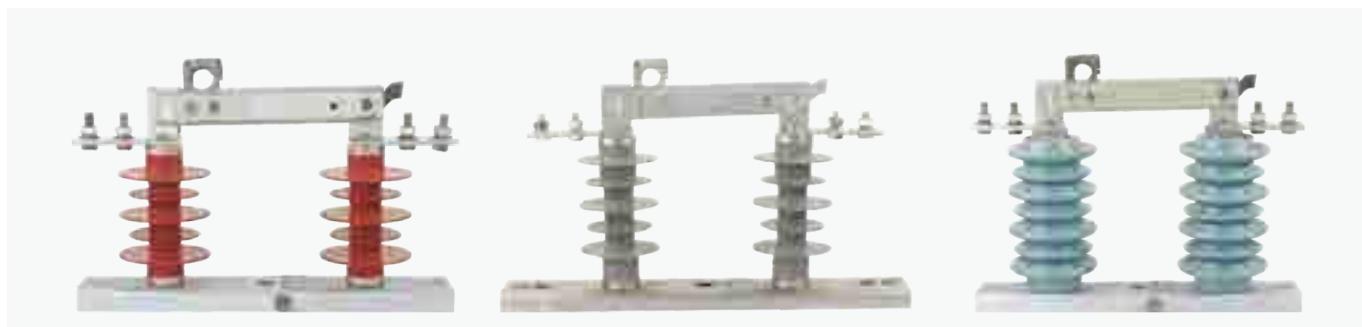
GW9 Outdoor Isolation Switch

Type designation



Operating conditions

1. The altitude does not exceed 1000m.
2. The ambient air temperature: Maximum+40°C; Minimum: General Area-30°C, Paramos-40°C.
3. The wind pressure does not exceed 700Pa.
4. The earthquake intensity does not exceed 8 degrees.
5. The working situation without frequent violent vibration.
6. The installation site of ordinary type isolator should be kept away from gas, smoke, chemical deposition, salt-spray-fog, dust and other and corrosive matters that affect seriously insulation and conduction capability of the isolator.
7. Pollution-proof type isolator is applies to severe filthy conduction area, however,
9. It shouldn't be any explosive matters and matters causing fire.



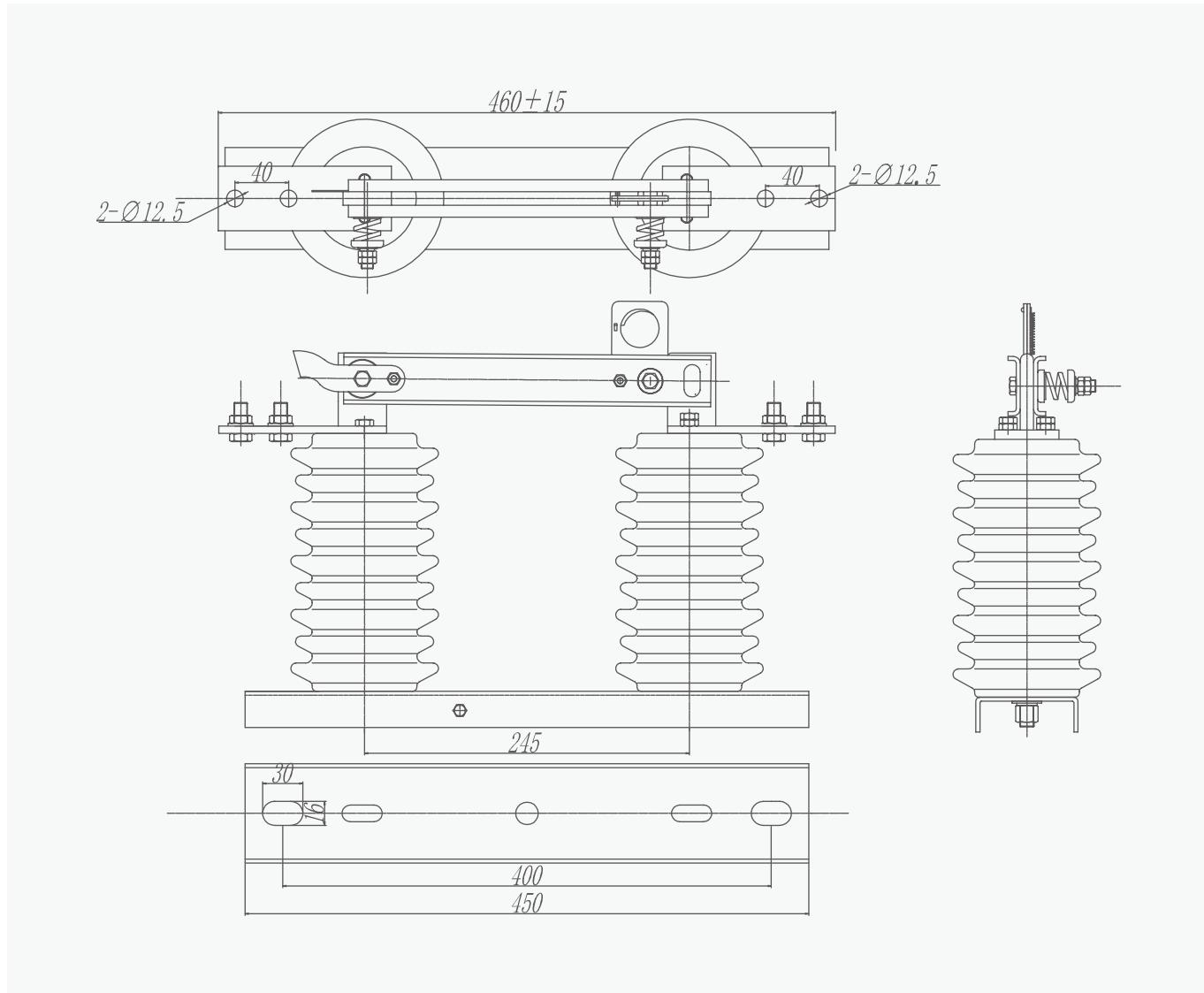
Technical data

Item	Unit	Value				
Technical data	KV	10	15	24		
Rated working voltage	KV	12	17.5			
Rated insulation level	1min power frequency withstand voltage (effective value)	to ground	KV	42	55	65
		Fracture	KV	48	65	79
	Lightning impulse withstand voltage (peak)	to ground	KV	75	105	125
		Fracture	KV	85	120	145
Rated frequency	Hz			50		
Rated current	A	200	400	630	1250	400
4s short-time withstand current	KA	6.3	12.5	20	31.5	16
Rated peak withstand current	KA	16	31.5	50	80	40
Creepage distance	mm	300		380		
Mechanical life	Time	2000		2000		2000

MV Isolation Switch

GW9 Outdoor Isolation Switch

Overall and mounting dimensions(mm)

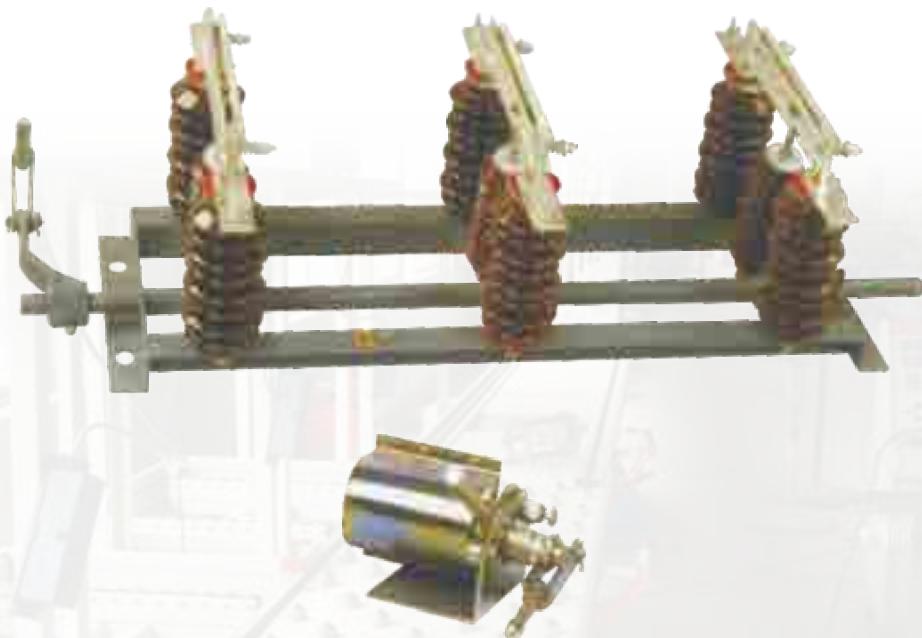


MV Isolation Switch

GW1 Outdoor Isolation Switch

- GW1series outdoor MV isolate switch is the high voltage switch equipment of composite structure, is suitable for outdoor 12kV line net with voltage and no load, to make opening and close. With CS□ type manpower operate machinery, can avoid earth line with power and composite flash-locks etc wrongoperate.
- The operator is no need to put another earth line. Pollution-proof typeisolate switch satisfy customer in filthy conduction area. It can solve the pollution of shed when it is working.

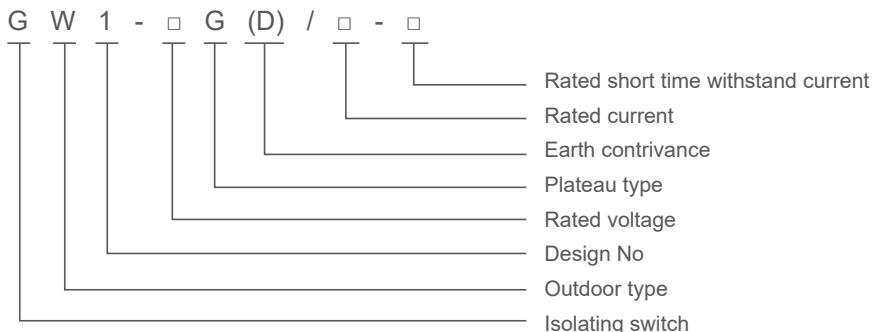
General



MV Isolation Switch

GW1 Outdoor Isolation Switch

Type designation



Operating conditions

1. The altitude above sea level: 2000m
2. The ambient air temperature: -40°C~40°C wind speed does not exceed 35m/s.
3. The earthquake intensity does not exceed 8 degrees.
4. The working situation is without frequent violent vibration.
5. The installation site of ordinary type isolator should be kept away from gas, smoke, chemical deposition, salt-spray fog, dust and other explosive and corrosive matters that affect seriously insulation and conduction capability of the isolator.
6. Pollution-proof type isolator is applicable to severe filthy conduction area, however, it shouldn't be any explosive matters and matters causing fire.



Technical data

Item	Unit	Technical parameter			
Rated voltage	kV	10	15	20	
Max. operating voltage	kV	12	17.5	24	
Rated insulation level	1min. power frequency withstand voltage	To earth	38	42	50
		Across open DS	42	48	60
	Rated lightning impulse withstand voltage	To earth	75	105	125
		Across open DS	85	120	145
Rated frequency	Hz		50		
Rated current	A	200	400	630	1250
4s short time withstand current	kA	6.3	12.5	20	31.5
Peak withstand current	kA	16	31.5	50	80
Mechanism supplied for disconnector		CS8-1, CS8-D, CD8-5 Rain type manual mechanism or CX6 motor drive mechanism			

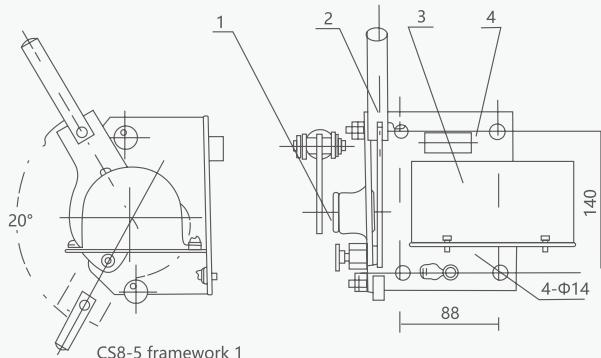
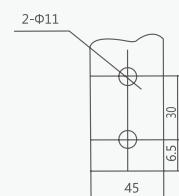
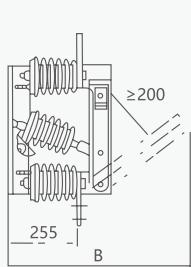
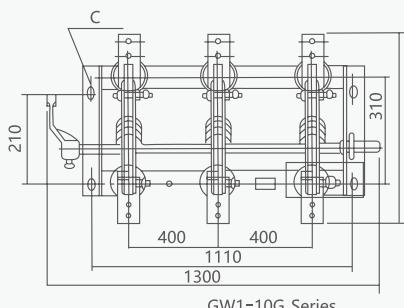
MV Isolation Switch

GW1 Outdoor Isolation Switch

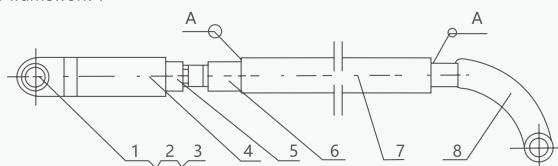
Technical data

Item	Unit	Technical parameter			
Rated voltage	kV	12	24	33	
Max. operating voltage	kV	15	27	35	
Rated insulation level	1min. power frequency withstand voltage	To earth	kV	40	50
		Across open DS	kV	47	60
	Rated lightning impulse withstand voltage	To earth	kV	105	125
		Across open DS	kV	120	145
Rated frequency	Hz		50		
Rated current	A	200	400	630	1250
4s short time withstand current	kA	6.3	12.5	20	31.5
Peak withstand current	kA	16	31.5	50	80
Mechanism supplied for disconnector		CS8-1, CS8-D, CD8-5 Rain type manual mechanism or CX6 motor drive mechanism			

Overall and mounting dimensions(mm)



GW1-12G/400A



GW1-12G/630A
Terminal Block Loop

Connect pole
 1. $\Phi 12$ Spindle
 2. Washer12
 3. Open bolt4 25
 4. Bend coupling
 5. M16Nut
 6. Pole
 7. 3/4" Water gas pipe
 8. Connect pole head

Product model number	A	B	C
GW1-12G/400A	510	555	$18 \times 24 = 4$
GW1-12G/630A	530	555	$18 \times 24 = 4$
GW1-24G/400A	510	555	$18 \times 24 = 4$
GW1-24G/630A	530	555	$18 \times 24 = 4$

MV Isolation Switch

GW4 Outdoor Isolation Switch

- GW4 outdoor MV isolation switch is used for three-phase AC 50Hz outdoor high-voltage electrical equipment, switching of lines under high-voltage no-load conditions, and electrically isolating electrical equipment such as high-voltage busbars, circuit breakers, and live high-voltage equipment for maintenance voltage lines, can also be used to switch small capacitor or inductor current. When the knife is in the normal open circuit position, it can provide insulation distance that meets safety requirements. Widely used in 35-110kV substations.

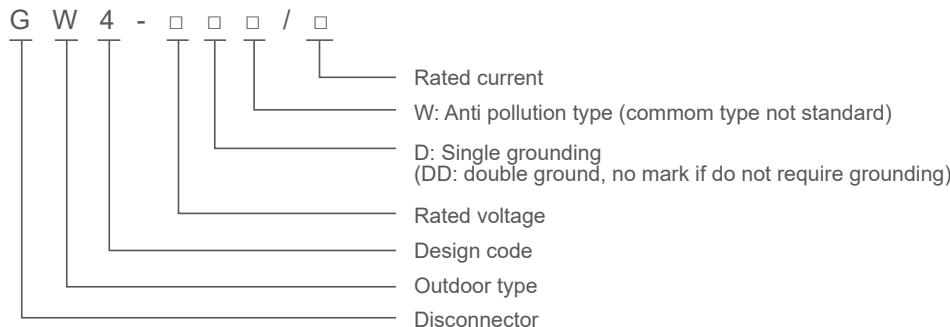
General



MV Isolation Switch

GW4 Outdoor Isolation Switch

Type designation



Technical data

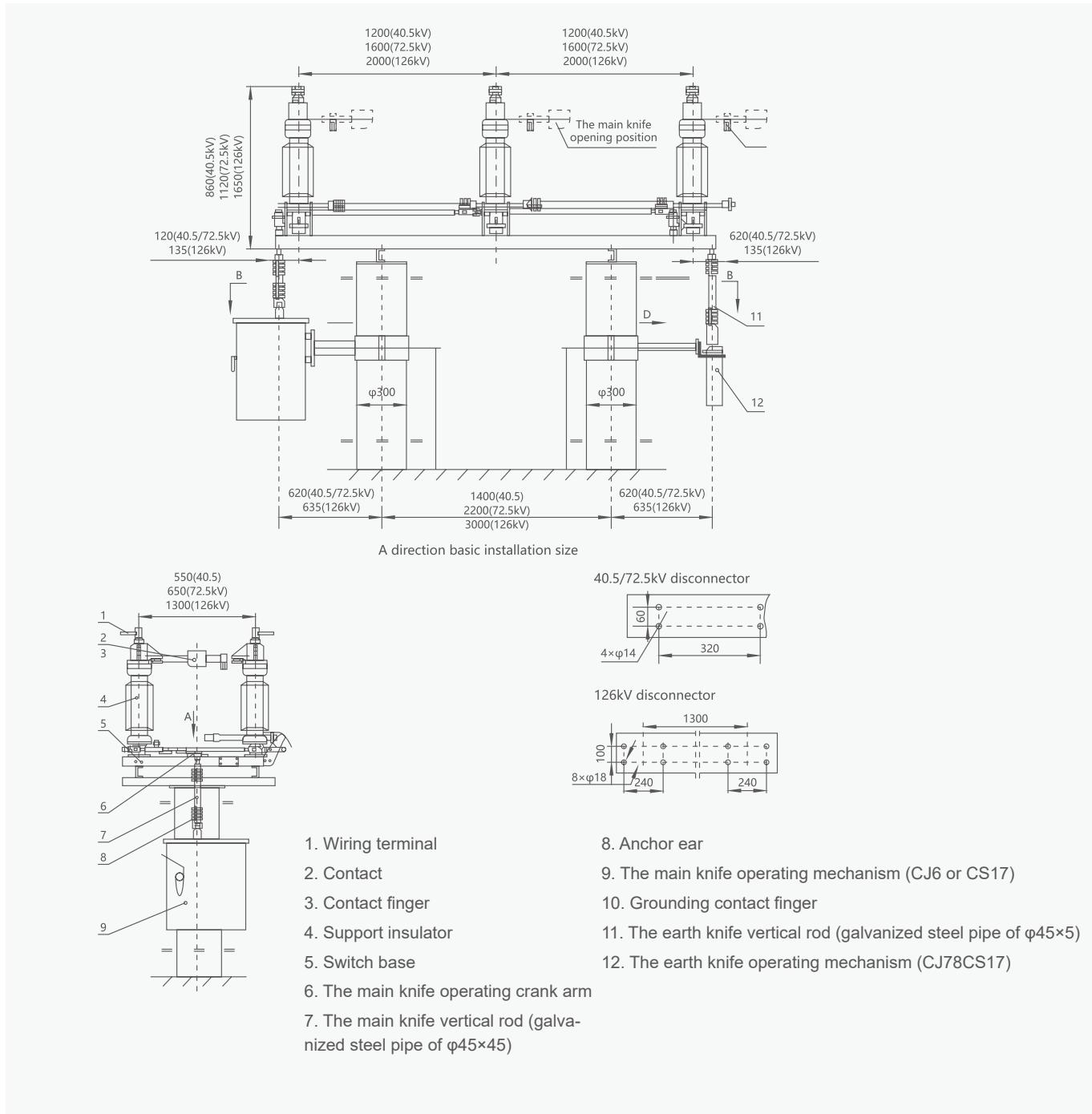
Item	Unit	Parameters				
		GW4- 40.5	GW4- 72.5	GW4- 126	GW4- 126G	GW4- 145
Rated voltage	kV	40.5	72.5	126	126	145
Rated current	A	630 1250 2000 2500	630 1250 2000 2500 4000	630 1250 2000 2500	630 1250	1250 2000 2500
Rated short-time withstand current (RMS)	KA	20 31.5 40(46)	20 31.5 40(46)	20 31.5 40(46)	20 31.5	20 31.5 40(46)
Rated peak withstand current (peak)	KA	50 80 100(104)	50 80 100(104)	50 80 100(104)	50 80	50 80 100(104)
Rated short-time withstand voltage (effective value)	KV	80	140	185(230)	185	375
Fracture		110	160	210(265)	210	315
Rated lightning impulse withstand voltage (peak)	KV	185	325	450(550)	450	650
Fracture		215	375	520(630)	550	750
Wiring terminal rated the horizontal tension			490(735)	735	735	960
Weight of single pole			80	200	240	300
						300

MV Isolation Switch

GW4 Outdoor Isolation Switch

Operating conditions

1. Ambient temperature: upper limit +40°C, lower limit -30°C
2. Altitude: no more than 3000m;
3. Wind speed: no more than 35m/s;
4. Earthquake intensity: do not exceed 8 degree;
5. Pollution level: no more than III class
6. No severe vibration, no corrosive gas, no fire, no explosion danger place.



MV Isolation Switch

GW5 Outdoor Isolation Switch

- GW5 outdoor MV isolating switch is used for three-phase AC 50Hz outdoor high voltage electrical equipment, used for the line to switching under voltage pressed no load condition, and electrical isolation the maintained high voltage bus, circuit breakers and other electrical equipment and charged high voltage line, can also be used for the opening and closing small capacitance or inductance current. When the knife in the normal break position, can provide a insulation distance consistent with safety requirements. Widely used in 35~110kV substation.

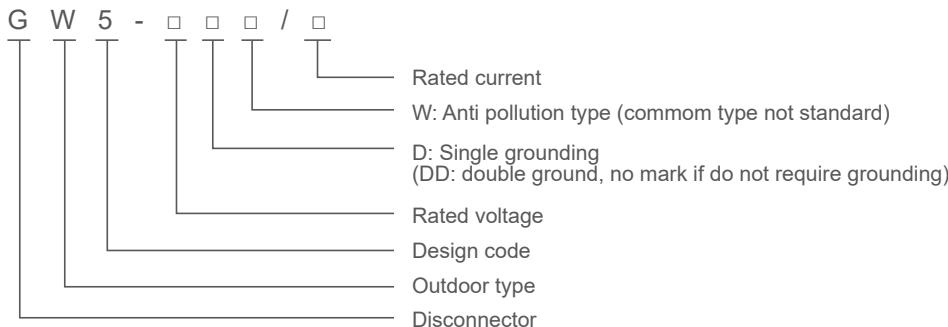
General



MV Isolation Switch

GW5 Outdoor Isolation Switch

Type designation



Operating conditions

1. The ambient temperature: upper limit +40°C, lower limit -40 °C;
2. Altitude: no more than 3000m;
3. Wind speed: not more than 35m/s;
4. Earthquake intensity: do not exceed 8 degree;
5. Pollution level: no more than III;
6. No severe vibration, no corrosive gas, no fire, no explosion danger place.

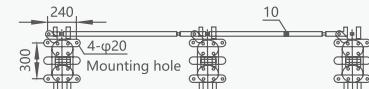
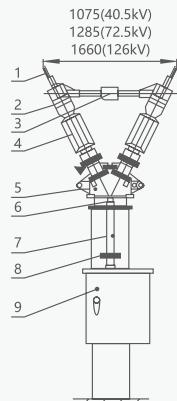
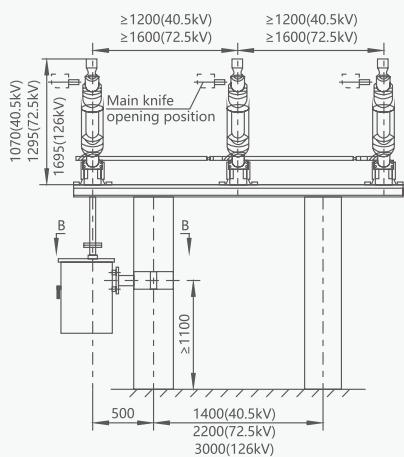
Technical data

Item	Unit	Parameters			
		GW5- 40.5	GW5-72.5	GW5-126	GW5-145
Voltage, current parameters					
Rated voltage	kV	40.5	72.5	126	145
Rated current	A		630/1250/1600/2000		
Rated frequency	Hz		50		
Disconnectors	Rated peak withstand current	kA		50/80/100	
	Rated short-time withstand current	kA		20/31.5/40	
	Rated short circuit duration	s		4	
I type earth knife	Rated peak withstand current	kA		25	
	Rated short-time withstand current	kA		10	
	Rated short circuit duration	s		4	
II type earth knife	Rated peak withstand current	kA		100	
	Rated short-time withstand current	kA		40	
	Rated short circuit duration	s		2	

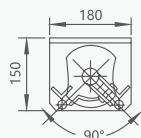
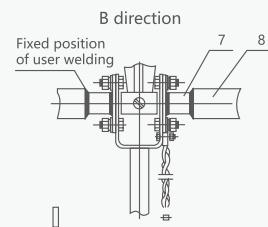
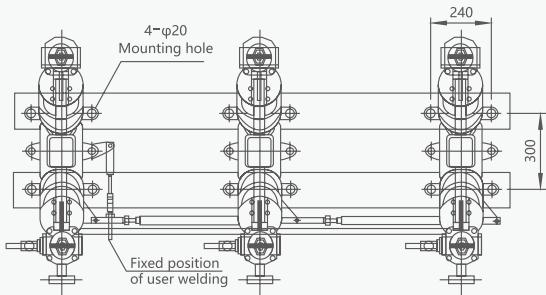
MV Isolation Switch

GW5 Outdoor Isolation Switch

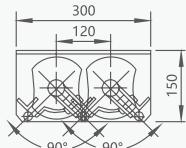
Overall and mounting dimensions(mm)



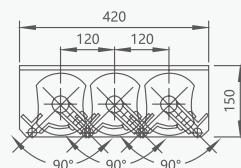
1. Connecting terminal
2. Main contact
3. Main contact finger
4. Porcelain insulator
5. Switch base
6. Cross-pin type joint
7. The main knife vertical rod (1 galvanized steel user owned)
8. Friction plate
9. The main operating mechanism (CJ6 electric operation or CS17 manual operation)
10. The main knife three-phase linkage rod



GS17 I type
manual operating mechanism



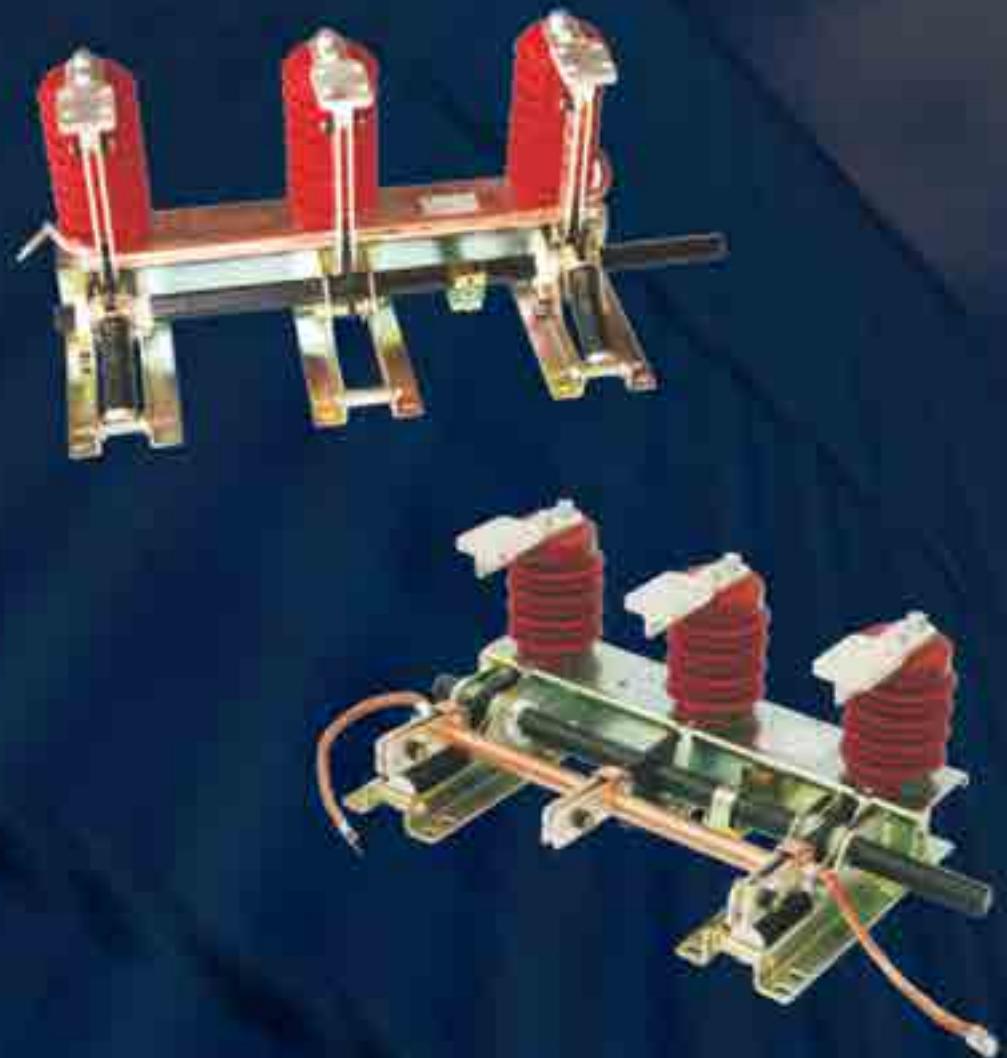
GS17 II type
manual operating mechanism



GS17 III type
manual operating mechanism

- ◆ — The main knife handle at the closing position
- ◆ — The main knife handle is in the off position
- ◆ — Earthing switch operation handle is in the closing position
- ◆ — Earthing switch operation handle is in the off position

MV Grounding Switch



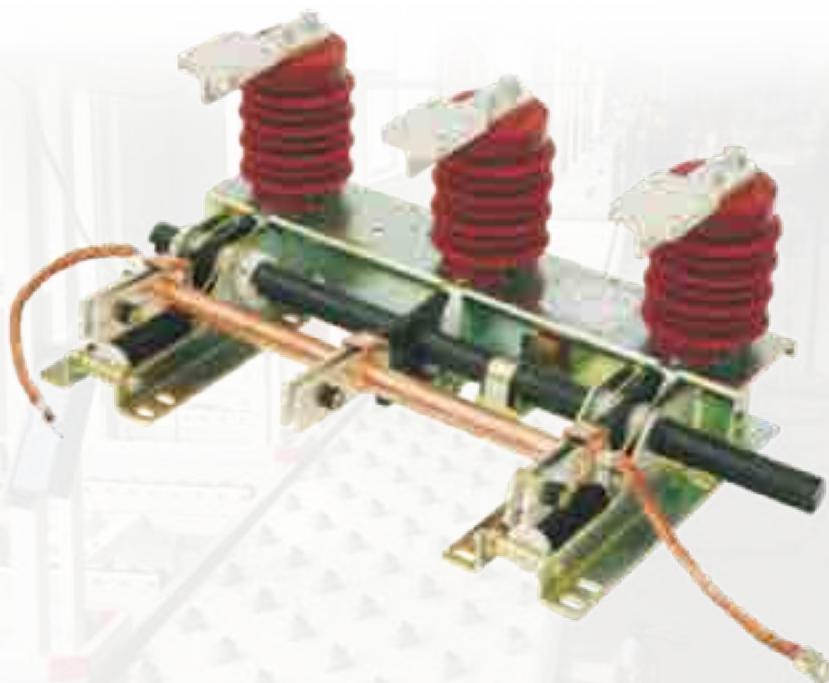
CNC
ELECTRIC

MV Grounding Switch

JN15-12 Indoor Grounding Switch

- JN15-12/31.5 series indoor earthing switch is a new design and improved product of our company according to the ES1 type, suitable with electric power system with 3- 12KV, Three-phase, AC 50(60)Hz, support with various kinds of HV switchgear and as earthing protection.
- Standard: IEC 129, IEC 62271-102

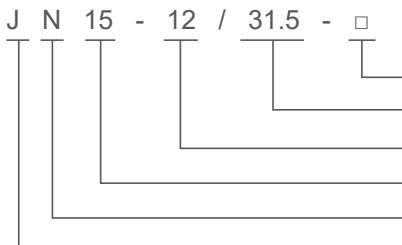
General



MV Grounding Switch

JN15-12 Indoor Grounding Switch

Type designation



Central distance between poles
Rated short-time withstand current(KA)
Rated voltage(KV)
Design No.
Indoor
Earthing switch

Operating conditions

1. Ambient temperature:-10~+40°C
2. Altitude: ≤1000m (sensor height:140mm)
3. Relative humidity: Day average relative humidity ≤95% Month average relative humidity ≤90%
4. Earthquake intensity: ≤8degree
5. Dirtiness degree: II

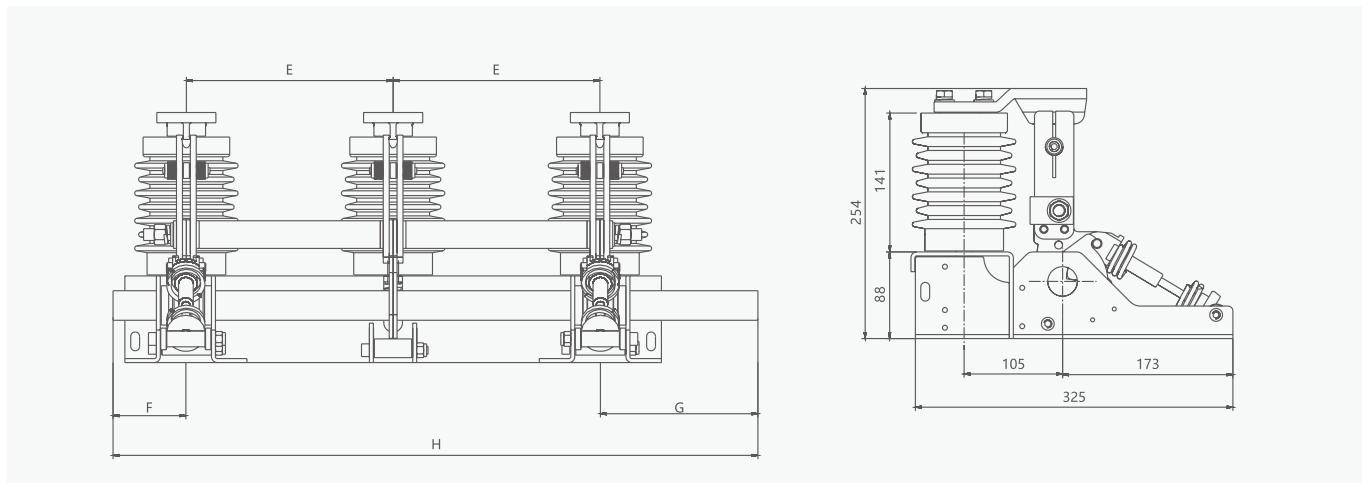
Technical data

Item	Units	Data
Rated voltage	kV	12
Rated short time withstand current	kA	31.5
Rated short circuit withstand time	s	4
Rated short circuit making current	kA	80
Rated peak withstand current	kA	80
Rated insulation level	1min power frequency withstand voltage	kV
	Lightning Impulse withstand voltage	kV
Mechanism life	time	2000

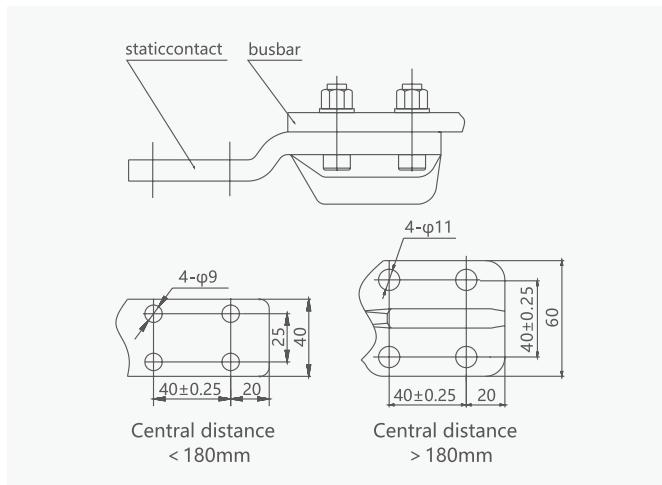
MV Grounding Switch

JN15-12 Indoor Grounding Switch

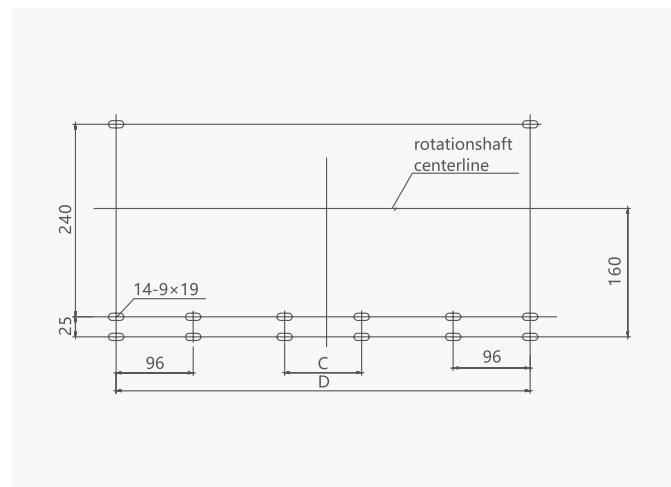
Overall and mounting dimensions(mm)



Copper terminal block



Hole location diagram



(Unit:mm)

Item	E	F	G	H	D	C
JN15-12/31.5-165	165	75	160	565	426	
JN15-12/31.5-180	180	75	160	595	456	
JN15-12/31.5-200	200	50	160	635	496	
JN15-12/31.5-210	210	50	185	655	516	
JN15-12/31.5-220	220	75	185	675	536	
JN15-12/31.5-230	230	75	185	695	556	96
JN15-12/31.5-250	250	75	185	735	596	96
JN15-12/31.5-275	275	75	210	810	646	96

Order notes:

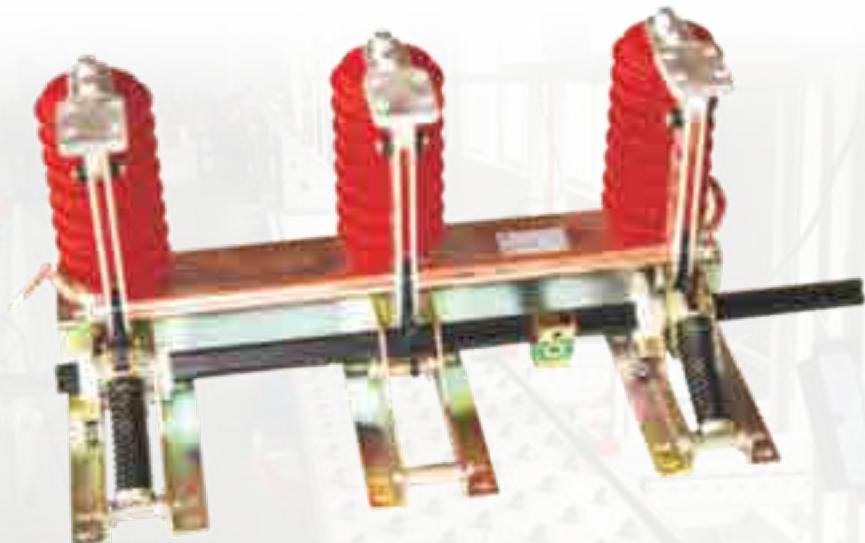
1. Indicate product specification, central distance between poles, if need the electric display device(type of the display) or not.
2. Need lengthen the soft link or not(normal L=250mm).
3. Please consult with our company if you have any special request.

MV Grounding Switch

JN15-24 Indoor Grounding Switch

- JN15-24 series indoor earthing switch is a new design and improved product of our company according to the JN15 type, (the installing size without any change),suitable for electric power system with 20-24KV, Three-phase, AC 50(60) Hz, supported with various kinds of HV switchgear and as earthing protection.
- Standard: IEC 129,IEC 62271-102

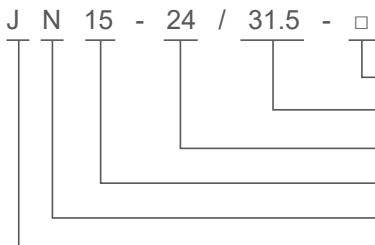
General



MV Grounding Switch

JN15-24 Indoor Grounding Switch

Type designation



Central distance between poles
Rated short-time withstand current(KA)
Rated voltage(KV)
Design No.
Indoor
Earthing switch

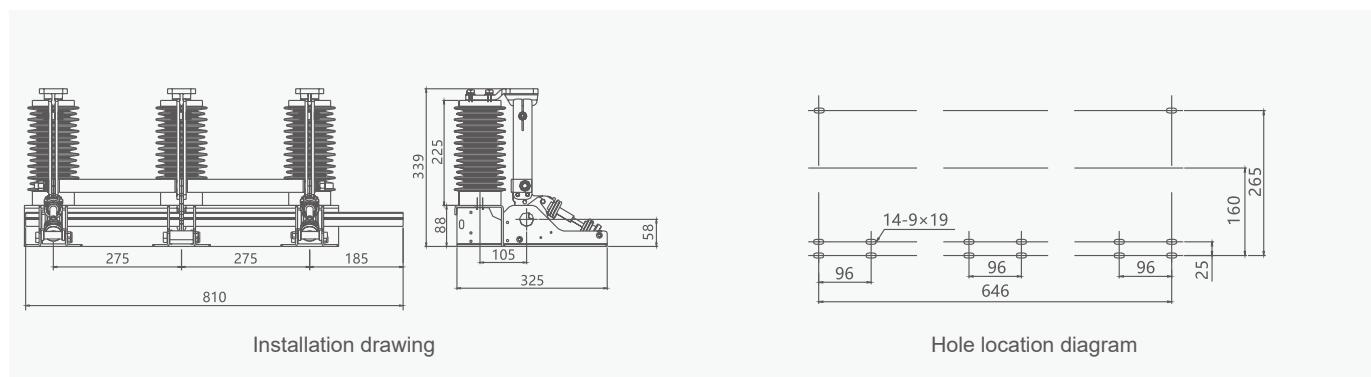
Operating conditions

1. Ambient temperature:-10~+40°C
2. Altitude: ≤2000m
3. Relative humidity: Day average relative humidity ≤95% Month average relative humidity ≤90%
4. Earthquake intensity: ≤8degree
5. Class of pollution: II

Technical data

Item	Units	Data
Rated voltage	kV	24
Rated short time withstand current	kA	31.5
Rated short circuit withstand time	s	4
Rated short circuit making current	kA	80
Rated peak withstand current	kA	80
Rated insulation level	1min power frequency withstand voltage	kV
	Lightning Impulse withstand voltage	kV
Mechanism life	time	2000

Overall and mounting dimensions(mm)



Installation drawing

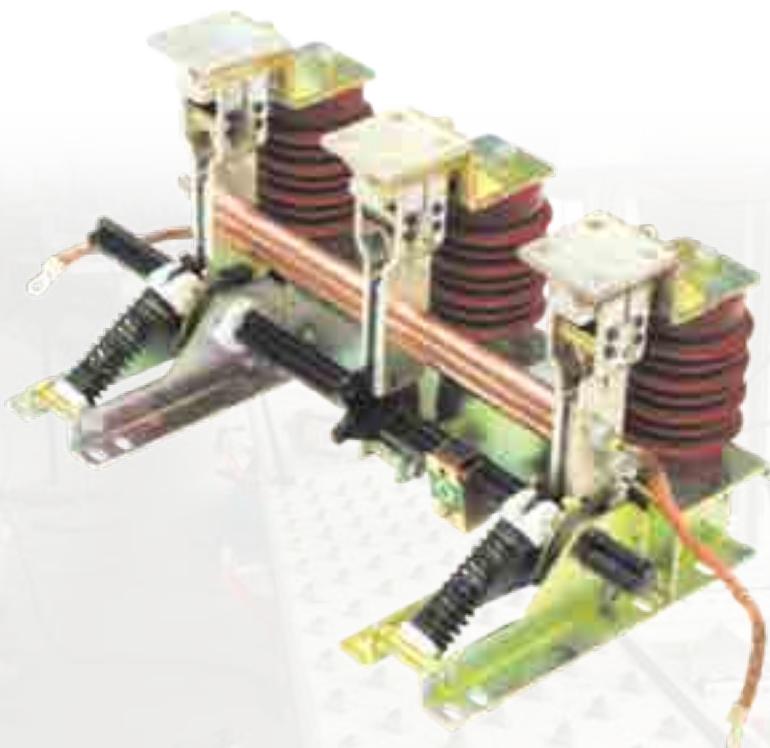
Hole location diagram

MV Grounding Switch

JN17-12/40 Indoor Grounding Switch

- JN17-12/40 (old type is JN15-12/40) series indoor MV earthing switch is a new design and improved product of our company according to the ES1 type, the structure is assembled, suitable for electric power system with 3-10KV, Three-phase,AC 50(60)Hz,supported with various kinds of HV switchgear and as earthing protection.
- Standard: IEC 129,IEC 62271-102

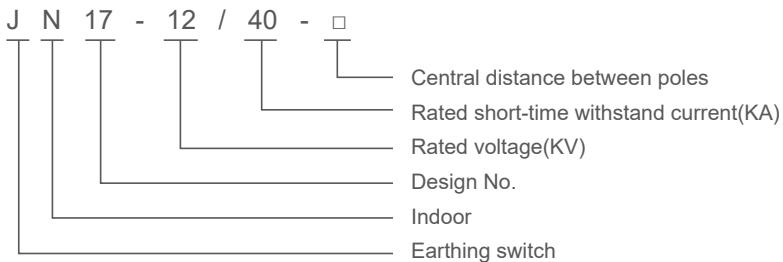
General



MV Grounding Switch

JN17-12/40 Indoor Grounding Switch

Type designation



Operating conditions

1. Ambient temperature:-10~+40°C
2. Altitude: ≤1000m
3. Relative humidity: Day average relative humidity ≤95% Month average relative humidity ≤90%
4. Earthquake intensity: ≤8degree
5. Class of pollution: II

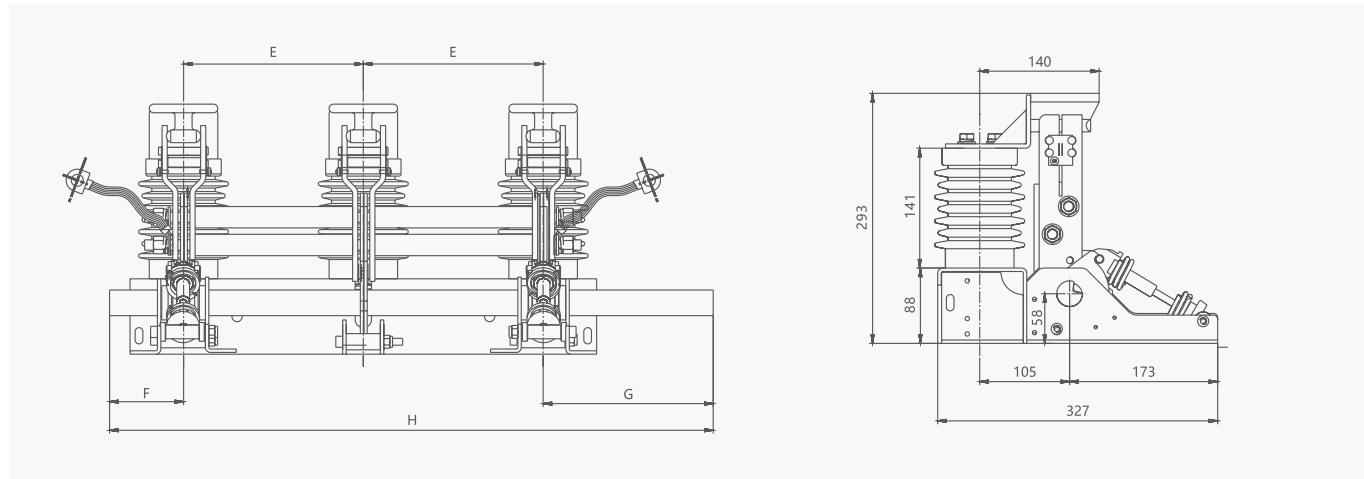
Technical data

Item		Units	Data
Rated voltage		kV	24
Rated short time withstand current		kA	31.5
Rated short circuit withstand time		s	4
Rated short circuit making current		kA	80
Rated peak withstand current		kA	80
Rated insulation level	1min power frequency withstand voltage	kV	65
	Lightning Impulse withstand voltage	kV	95
Mechanism life		time	2000

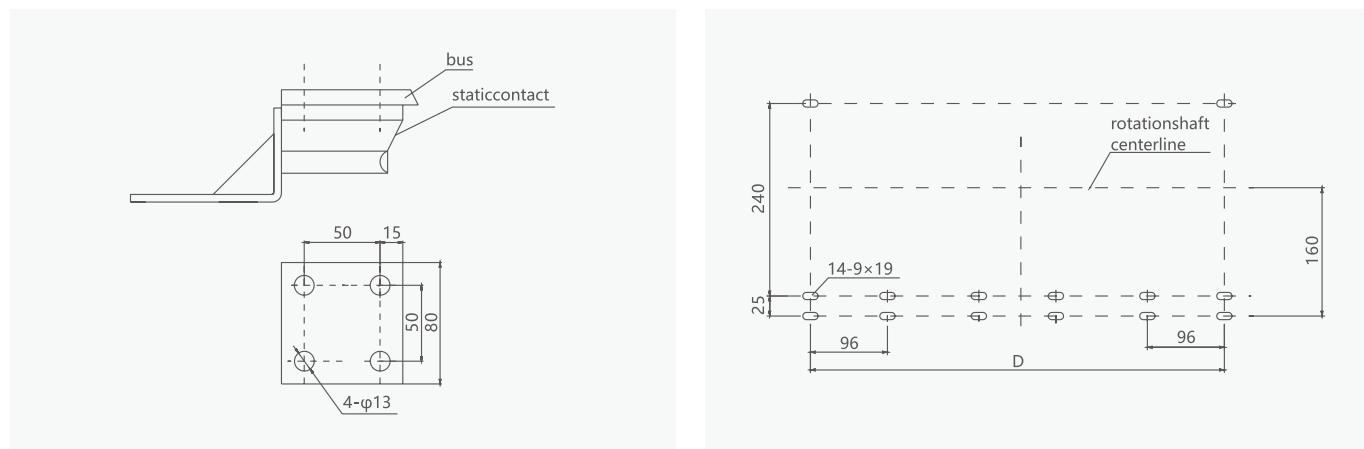
MV Grounding Switch

JN17-12/40 Indoor Grounding Switch

Overall and mounting dimensions(mm)



Copper terminal block



(Unit:mm)

Item	E	F	G	H	D
JN17-12/40-210	210	50	185	655	516
JN17-12/40-220	220	50	185	675	536
JN17-12/40-230	230	50	185	695	556
JN17-12/40-250	250	50	185	735	596
JN17-12/40-275	275	50	210	810	646

Order notes:

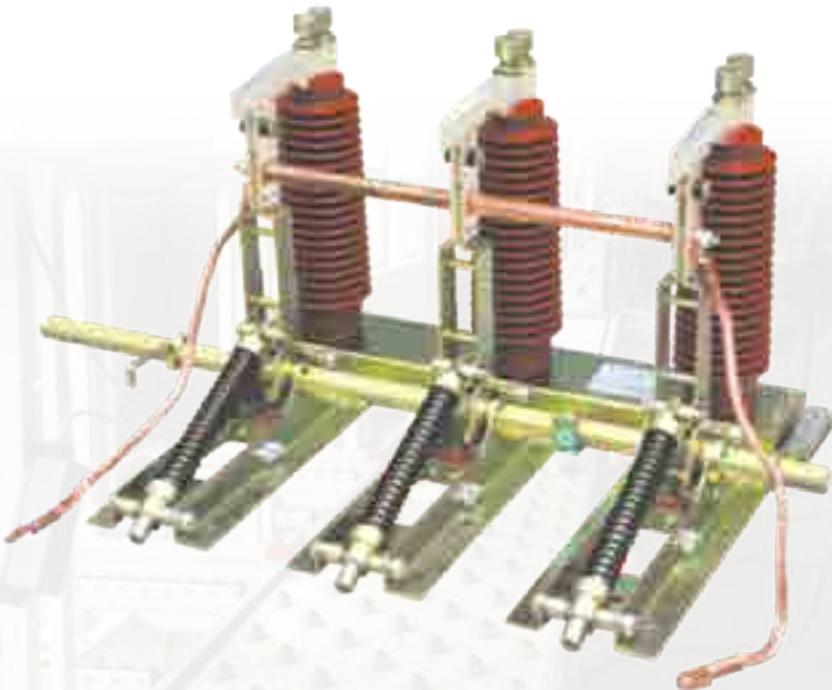
1. Indicate product specification, central distance between poles, whether need the electric display device(type of the display) or not.
2. Need lengthen the soft link or not(normal L=250mm)
3. Please consult with our company if you have any special request.

MV Grounding Switch

JN22-40.5/31.5 Indoor Grounding Switch

- JN22-40.5/31.5 series indoor MV earthing switch is researched and developed by XI'AN HV Electric research organization, with advanced design and steady performance, simple structures, simple mounting and adjustment, suitable of electric power system with 40.5KV, Three-phase, AC 50Hz.. Support with KYN□-40.5 and other various kinds of MV switchgear and as earthing protection.
- Standard: IEC 129, IEC 62271-102

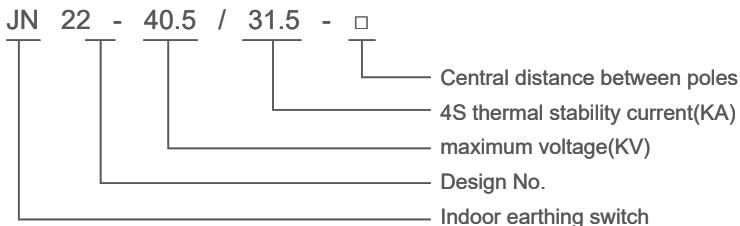
General



MV Grounding Switch

JN22-40.5/31.5 Indoor Grounding Switch

Type designation



Operating conditions

1. Ambient temperature:-10~+40°C
2. Altitude: ≤1000m
3. Relative humidity: Day average relative humidity ≤95% Month average relative humidity ≤90%
4. Earthquake intensity: ≤8degree
5. Applicable in the place without corrosive, flammable gas and water place
6. With no frequently intense vibrant place around.

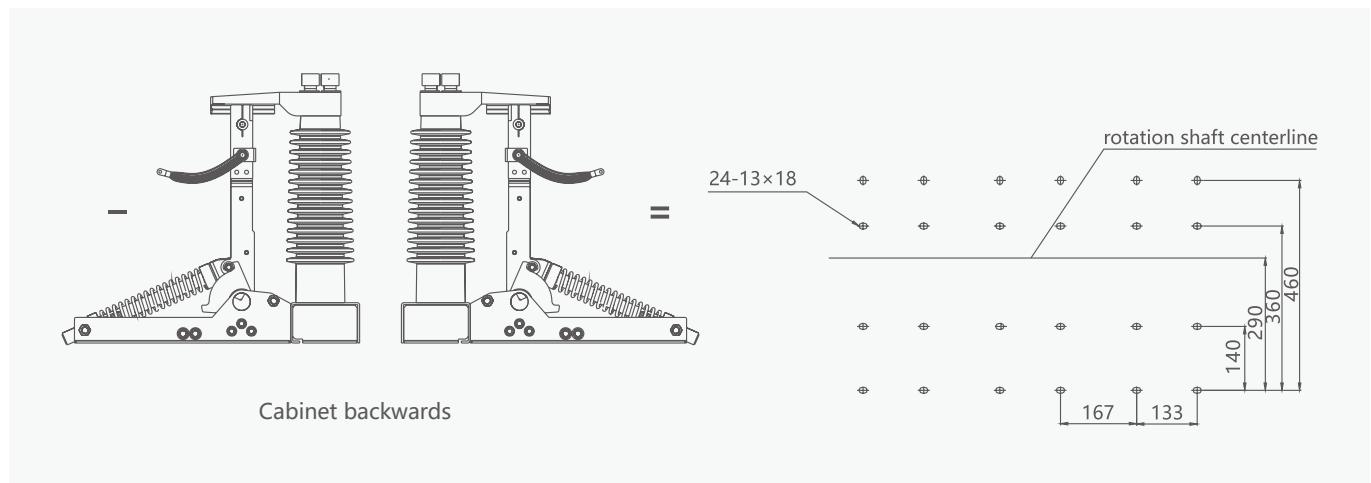
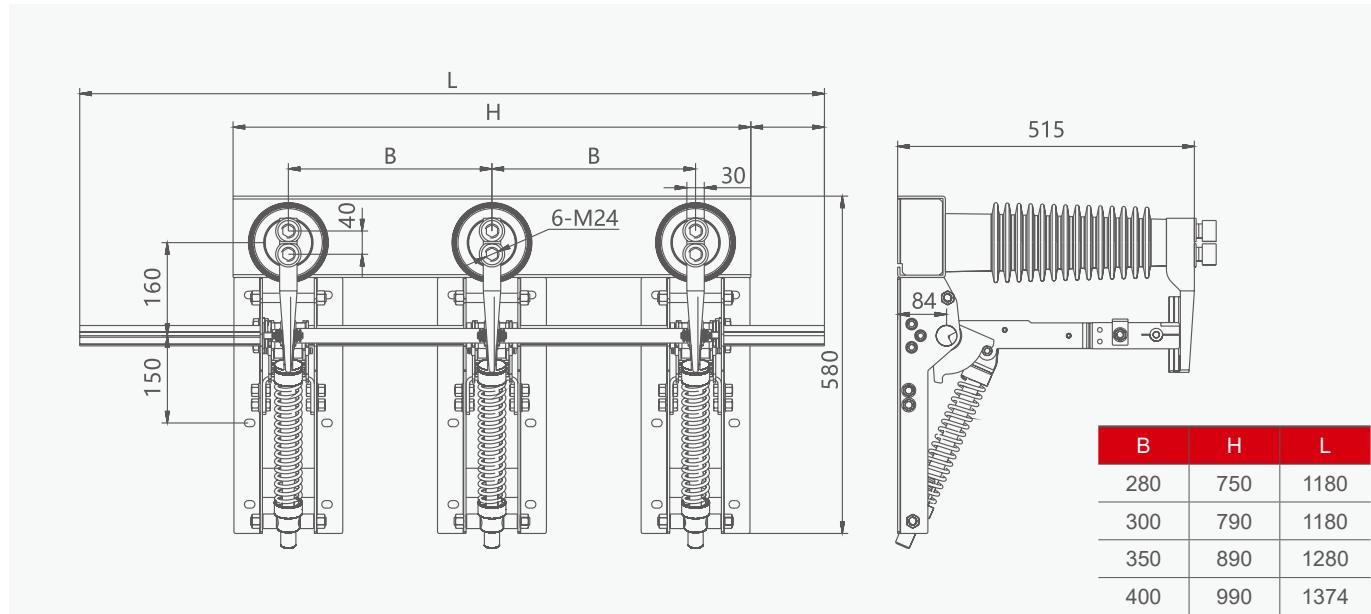
Technical data

Item	Units	Data
Rated voltage	kV	35
Maximum voltage	kV	40.5
Rated short time withstand current	kA	31.5
Rated short circuit withstand time	s	4
Rated short circuit making current	kA	80
Rated peak withstand current	kA	80
Rated insulation level	1min power frequency withstand voltage	kV
	Lightning Impulse withstand voltage	kV
Central distance between poles	mm	300; 350; 400

MV Grounding Switch

JN22-40.5/31.5 Indoor Grounding Switch

Overall and mounting dimensions(mm)



Order Notes

1. Indicate product specification, rated voltage, thermal stability current, central distance between poles.
2. If need shaft operating mechanism, indicate right operation mechanism or left operation mechanism according to the operation position shows in the drawing above.
3. If need sensors with electric display device, please indicate the display type.
4. Please consult with our company if you have any special request.

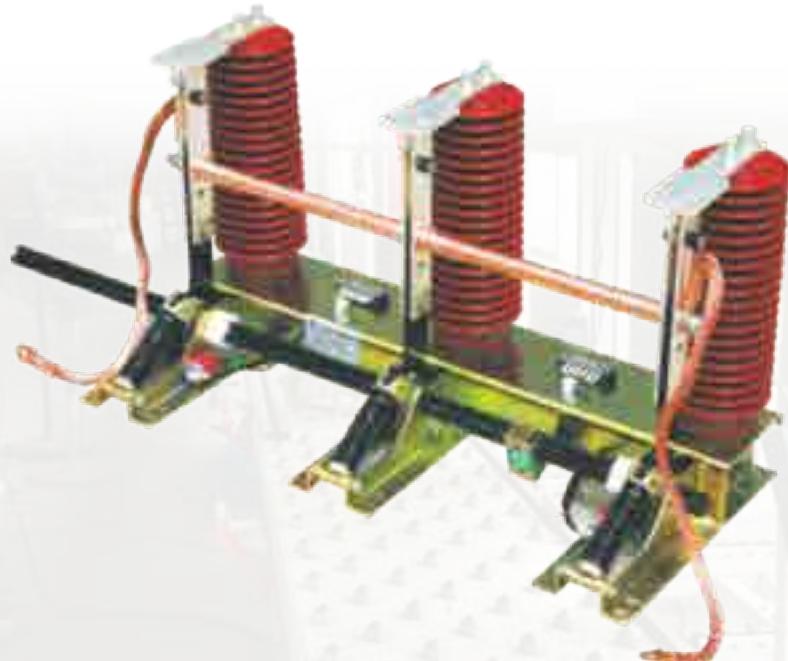
B	H
280	750
300	790
350	890
400	990

MV Grounding Switch

JN22B-40.5/31.5 Indoor Grounding Switch

- JN22B-40.5/31.5 series indoor MV earthing switch is researched and developed by our company based on original JN15 type, supporting with electric power system 40.5KV, AC 50Hz, match KYN₂-40.5 and other various kinds of MV switchgear and as earthing protection.
- Standard: IEC 129, IEC 62271-102

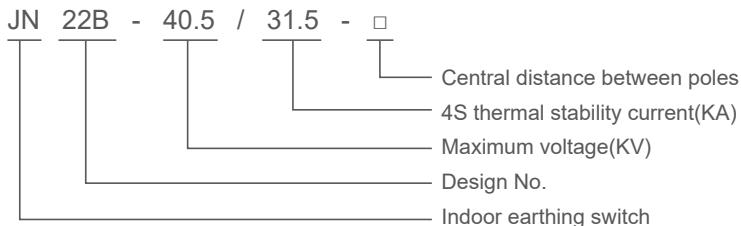
General



MV Grounding Switch

JN22B-40.5/31.5 Indoor Grounding Switch

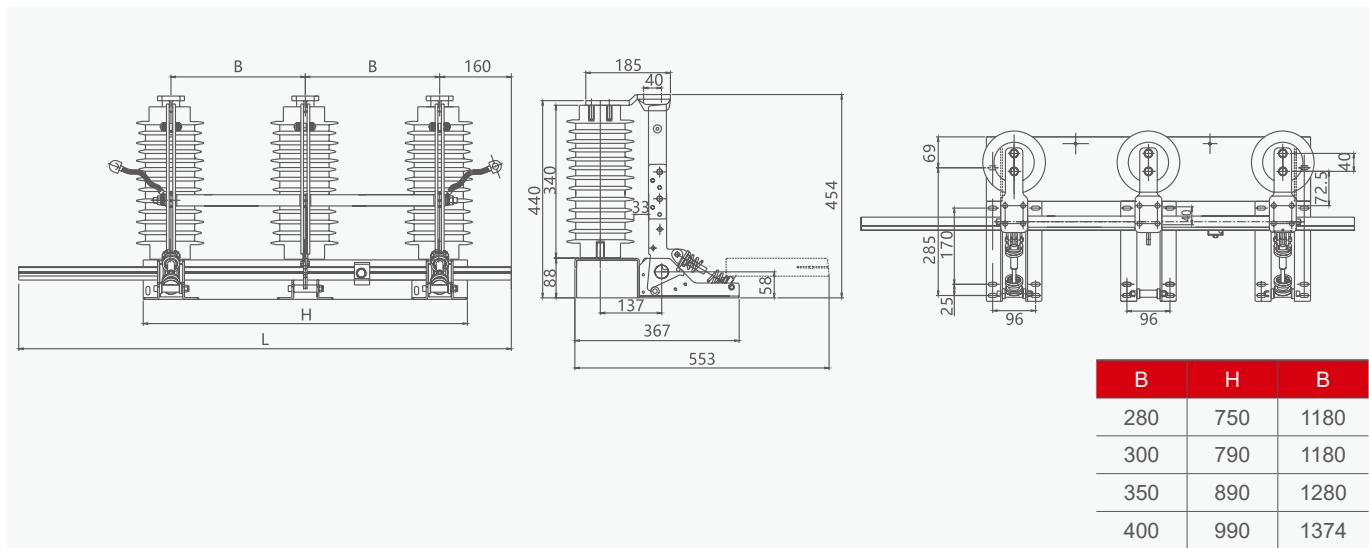
Type designation



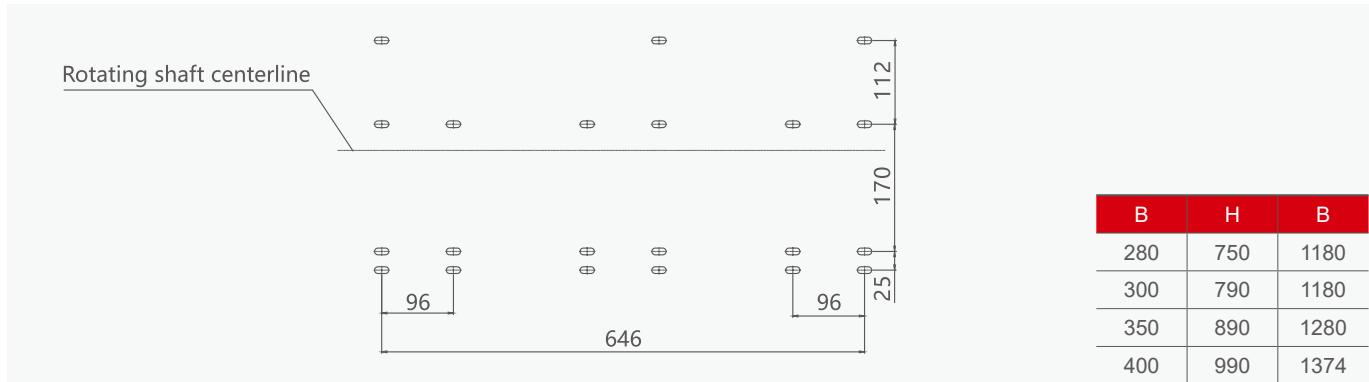
Operating conditions

1. Ambient temperature:-10~+40°C
2. Altitude: ≤1000m
3. Relative humidity: Day average relative humidity ≤95% Month average relative humidity ≤90%
4. Earthquake intensity: ≤8degree
5. Applicable in the place without corrosive, flammable gas and water place
6. With no frequently intense vibrant place around.

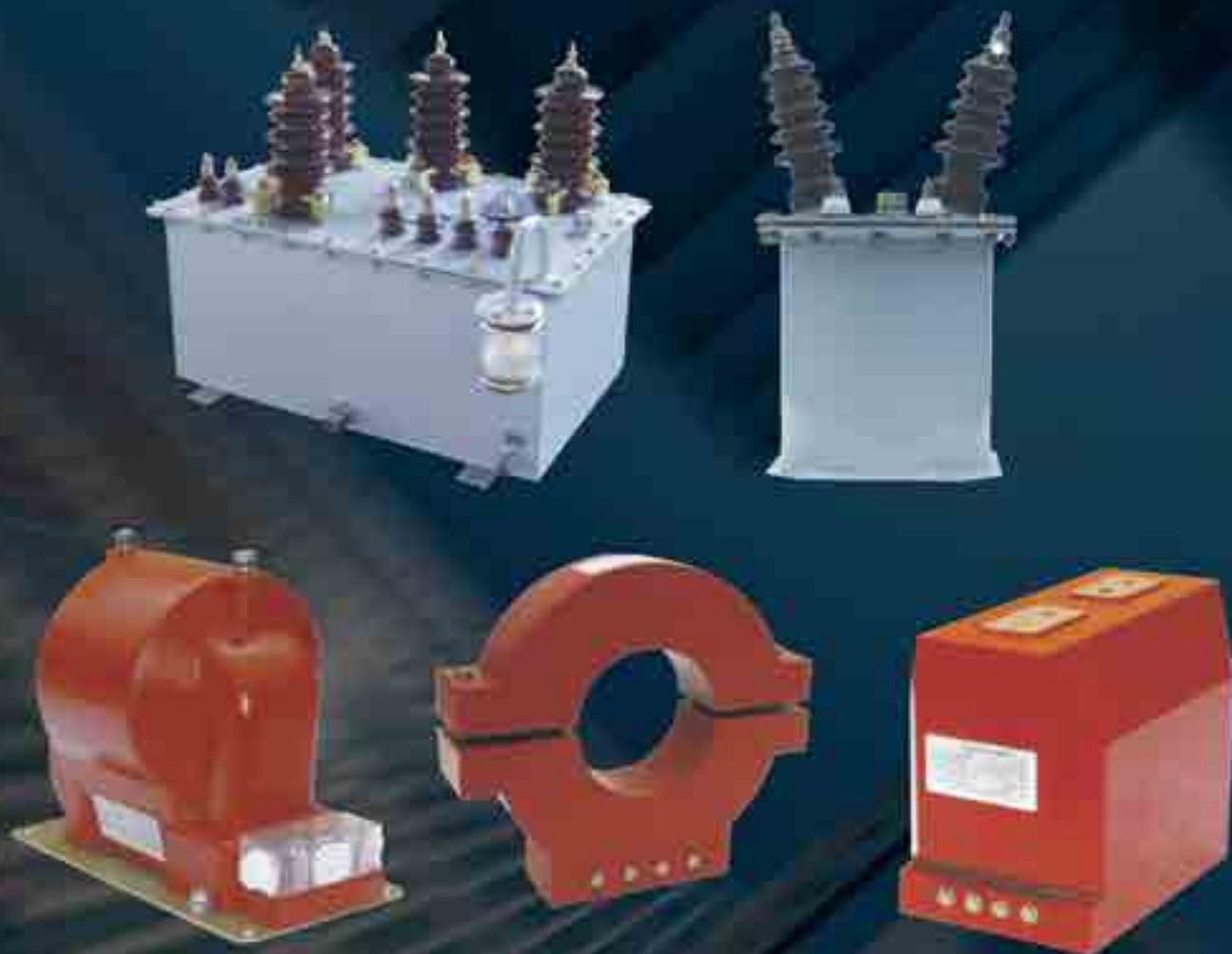
Overall and mounting dimensions(mm)



Hole location diagram



MV Transformer CT&PT



CNC
ELECTRIC

MV Transformer CT&PT **LFS(B)-10 Current Transformer**

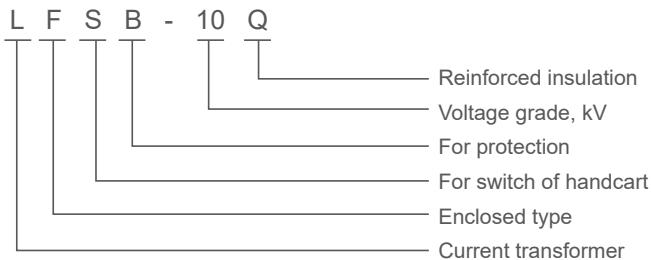
- This type of current transformer is casting resin, fully enclosed and post type product. It is used for metering electric energy and current, relay protection in the electrical system.
- Standard:IEC 61869-2

General



LFS(B)-10 Current Transformer

Type designation



Structural introduction

This type of current transformer is fully enclosed and post type. It has a good ability of insulation, moisture proof and antipollution. It is small and light. It can be installed at any place and any direction.

Operating conditions

1. Rated insulation level: 12/42/75kV;
2. Rated secondary current: 5A, 1A;
3. Refer to the table for rated primary current, accuracy classed combination, rated output, rated dynamic and thermal current.
4. The conditions of partial discharge test is in line with GB1208-2006 current transformer.
5. Antipollution class: II class.

Technical data

Model	Rated Primary Current (A)	Accurate Grade Combination	Rated Secondary Output(VA)			Rated Short-time thermal-current (KA virtual value)	Rated Dynamic Stability Current (KA virtual value)
			0.2	0.5	10P10		
LFS-10 (LZZB-10)	5-200	0.2/0.2 0.5/0.5 0.2/0.5 0.2/10P10 0.5/10P10	10	10	15	8011N	20011N
	300					21	50
	400					24	60
	600					30	70
	800					40	75
	1000						
LFSB-10 (LZZBJ-10)	5-200	0.2/10P10 0.5/10P10	10	10	20	8011N	20011N
	300					21	50
	400					24	60
	600					30	70
	800					40	75
	1000						

MV Transformer CT&PT

LFS(B)-10 Current Transformer

Diagram1 Overall and mounting dimensions(mm) of LFS-10Q(LZZB-10)

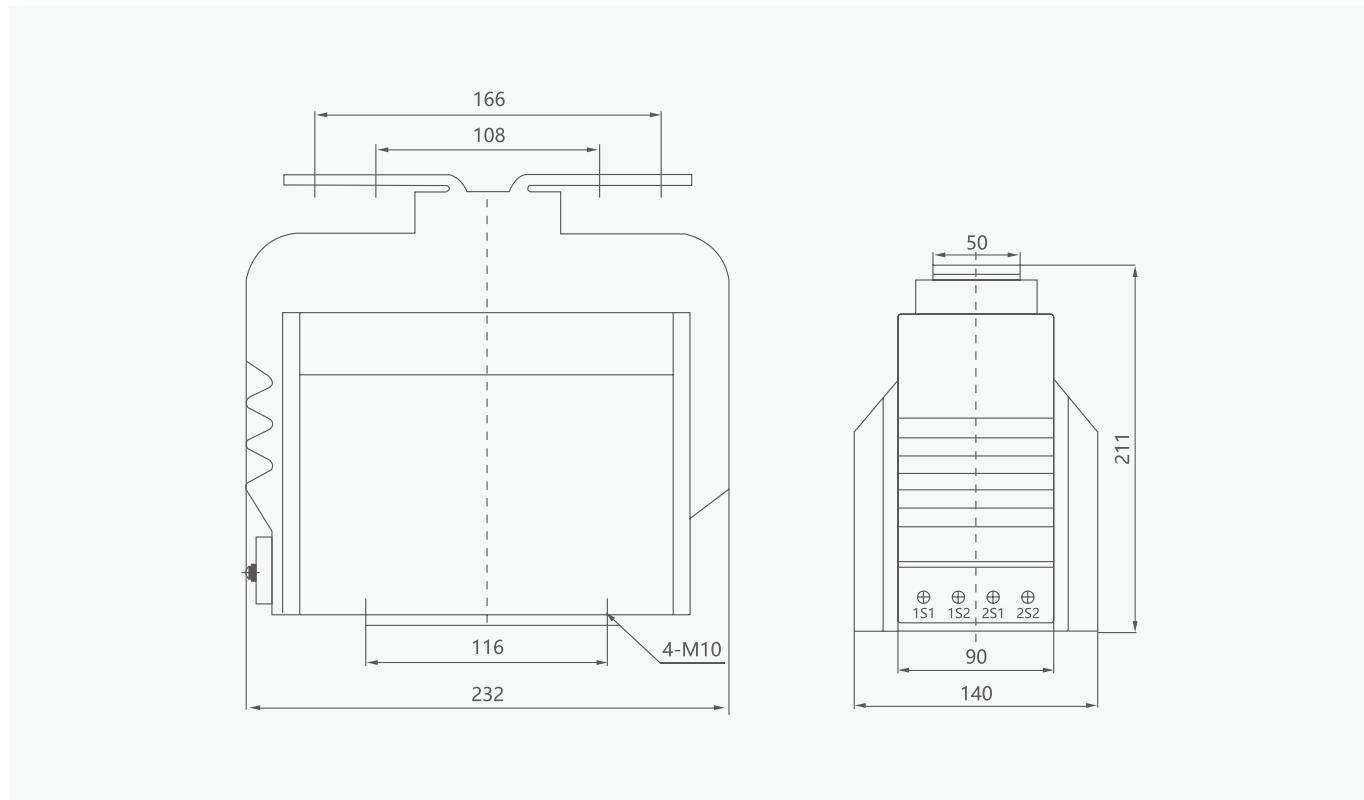
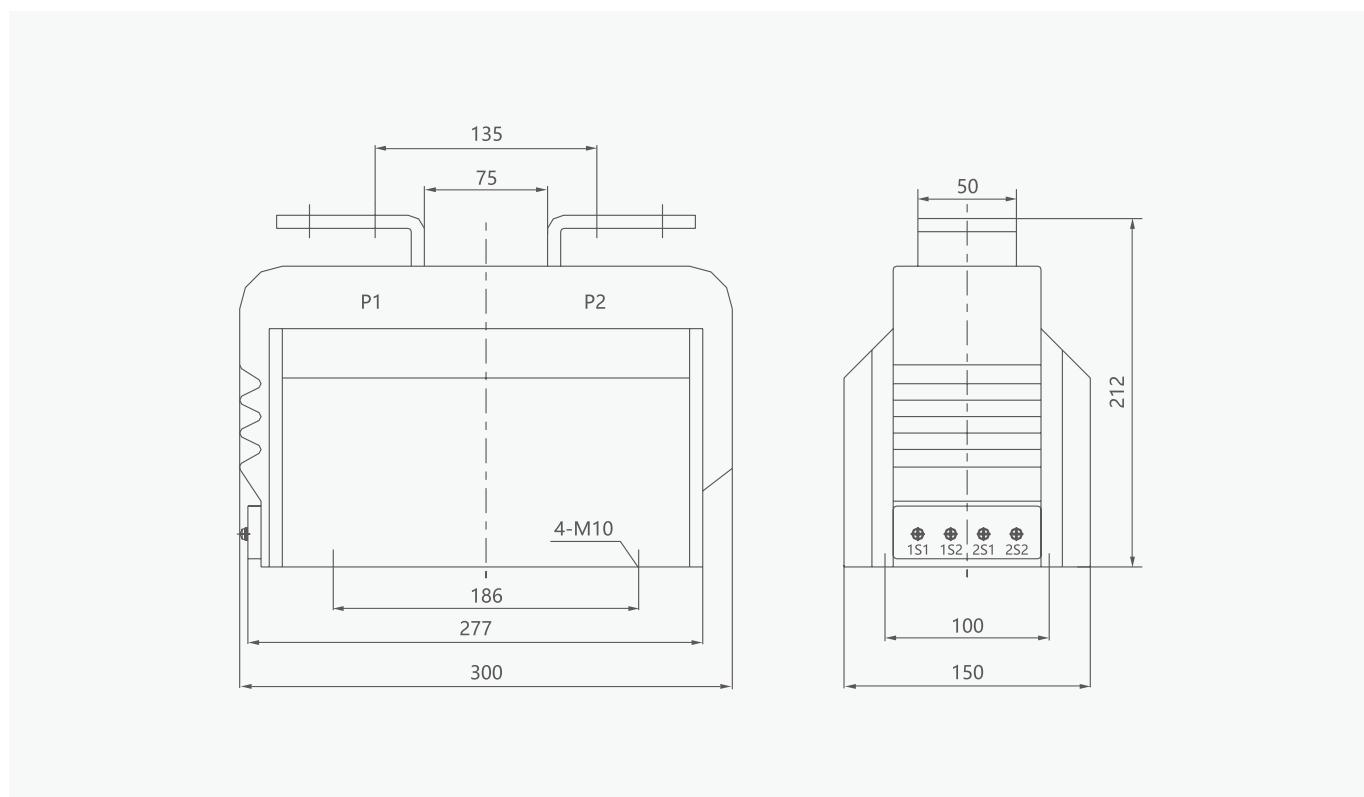


Diagram2 Overall and mounting dimensions(mm) of LFSB-10(LZZBJ-10)



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LZZBJ9-10 Current Transformer

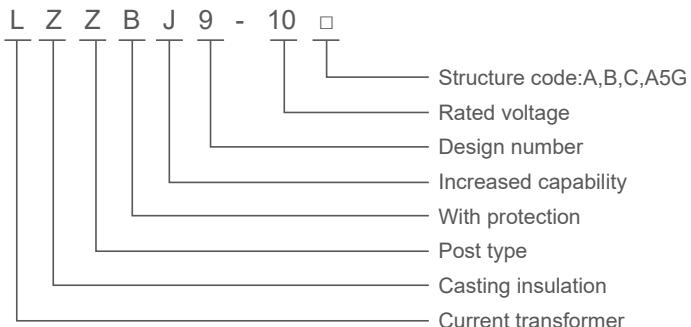
- ◆ This current transformer is of a whole sealing casting insulation pillar type, used for measurement of current and electric energy as well as relay protection in the AC circuit of rated frequency 50Hz and rated voltage 10kV.
- ◆ Standard:IEC 61869-2

General



LZZBJ9-10 Current Transformer

Type designation



Operating conditions

1. The performance of products is conformed to IEC standard and GB1208-2006 Current Transformer.
2. Rated insulation level: 12/42/75kV
3. Load power factor: $\cos\phi=0.8$ (Lag)
4. Rated frequency: 50Hz
5. Rated secondary current: 5A, 1A
6. Partial discharge level: In conformity to GB5583-85 standard, its partial discharge is not more than 20PC.

Technical data

Model	Rated Primary Current (A)	Accurate Grade Combination	Rated Secondary Output(VA)				Rated Short-time thermal-current (KA virtual value)	Rated Dynamic Stability Current (KA virtual value)
			0.2,0.2S	0.5, 0.5S	10P10	10P15		
LZZBJ9-10 (A,B,C)	5	0.2/10P 0.2S/10P 0.5/10P 0.5S/10P	10	10	10	15	2	5
	10						4.5	11
	15						6.3	15
	20						9.5	23
	30						12.6	31.5
	40						18	45
	50						22	55
	70						36	80
	100-200						50	90
	300-600						72	100
	800-1250						80	110
	1500-3150						100	130

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LZZBJ9-10 Current Transformer

Model	Rated Primary Current (A)	Accurate class combination	Rated output (VA)	Rated short-time thermal current (KA virtual value)	Rated dynamic stability current (KA peak)
LZZBJ9-10A5G	20,30,40,50,75,100	0.2/0.2/5P10 0.2/0.5/5P15 0.2/0.5/5P20 0.2/5P10/10P15 0.5/5P10/10P20	10/10/40 10/15/30 10/15/20 10/20/20 10/20/15	150I1n	375I1n
	150,200			31.5	80
	300,400			45	112.5
	500			63	130
	600,800			63	130
	1000,1200,1250	0.2/0.2/5P10 0.2/0.5/5P15 0.2/0.5/5P20 0.2/5P10/10P15 0.5/5P10/10P20"	10/10/40 10/15/30 10/15/20 10/20/20 10/20/15	80	160
	1500			100	160
	2000				
	2500				
	3000,3150				

MV Transformer CT&PT

LZZBJ9-10 Current Transformer

Outline and Installation

Fig 1 Overall and installation dimension of LZZBJ9-10A current transformer

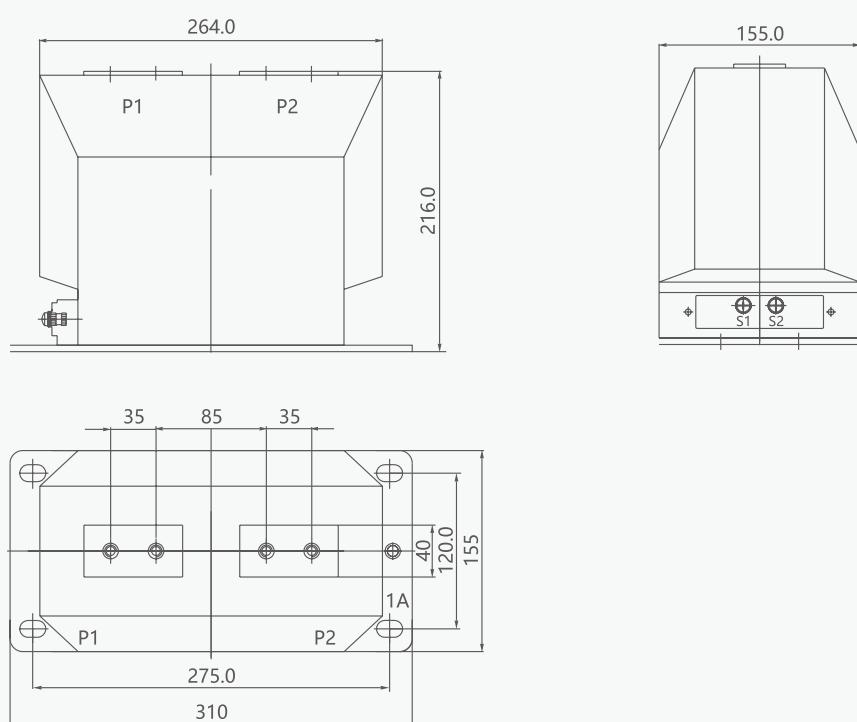
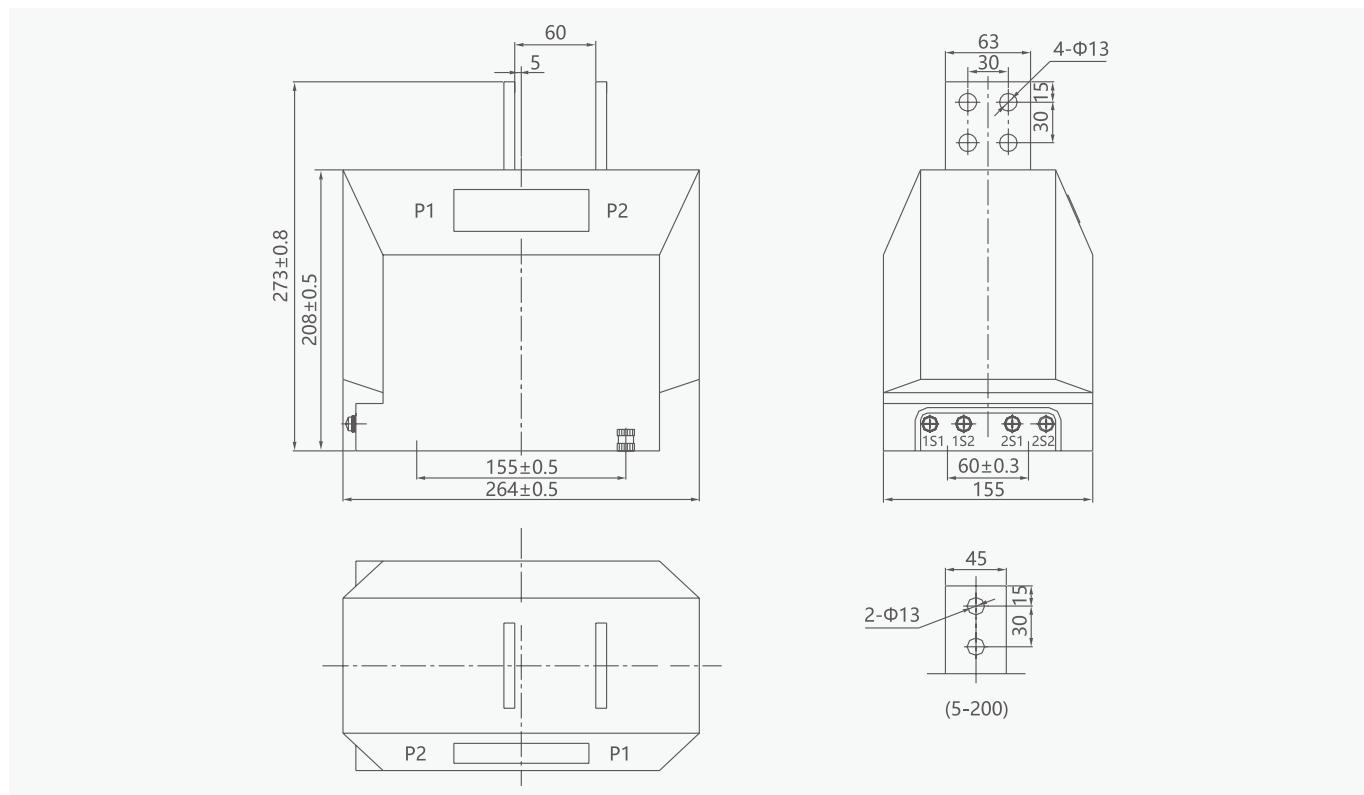


Fig 2 Overall and installation dimension of LZZBJ9-10B current transformer



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LZZBJ9-10 Current Transformer

Outline and Installation

Fig 3 Overall and installation dimension of LZZBJ9-10C current transformer

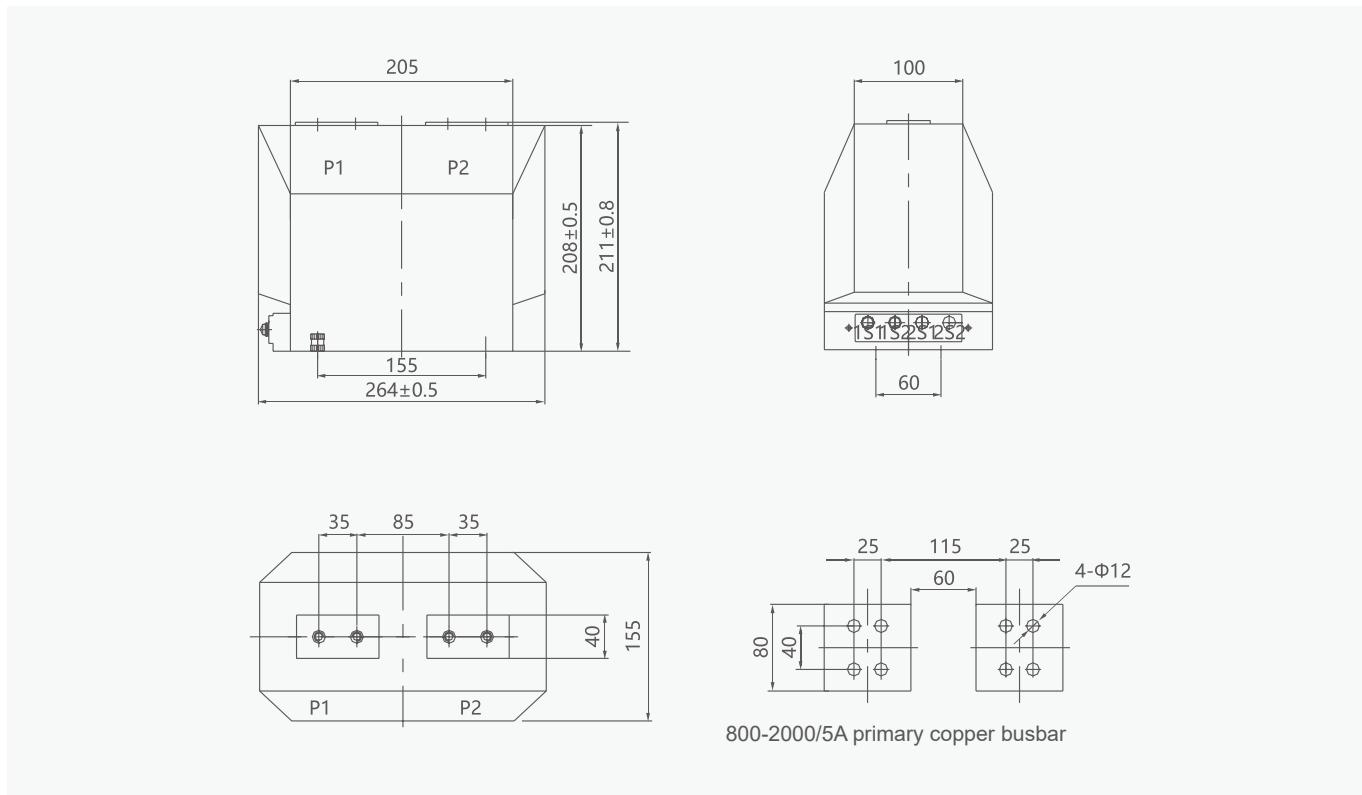
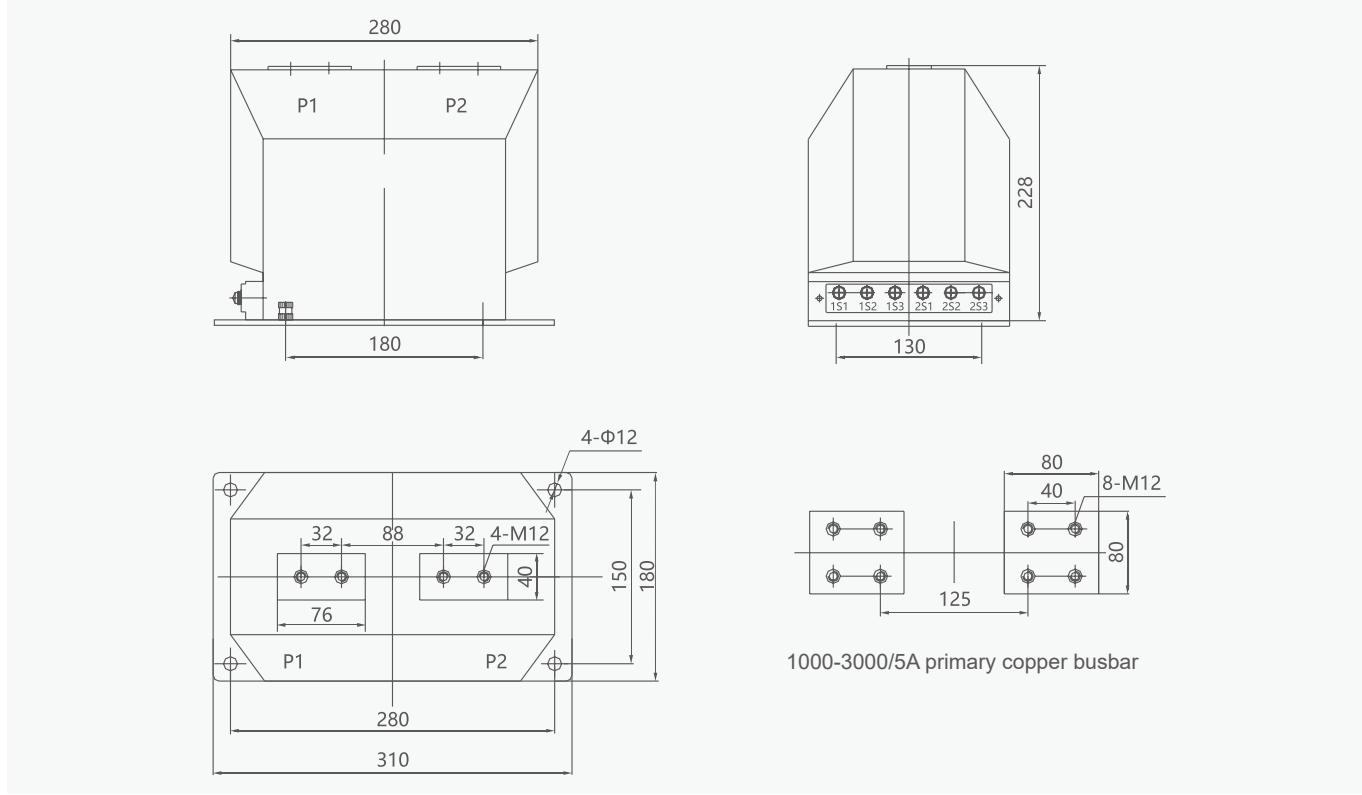


Fig 4 Overall and installation dimension of LZZBJ9-10C 2 current transformer



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LZZBJ9-10 Current Transformer

Outline and Installation

Fig 5 Overall and installation dimension of LZZBJ9-10A5G 5-1000A current transformer

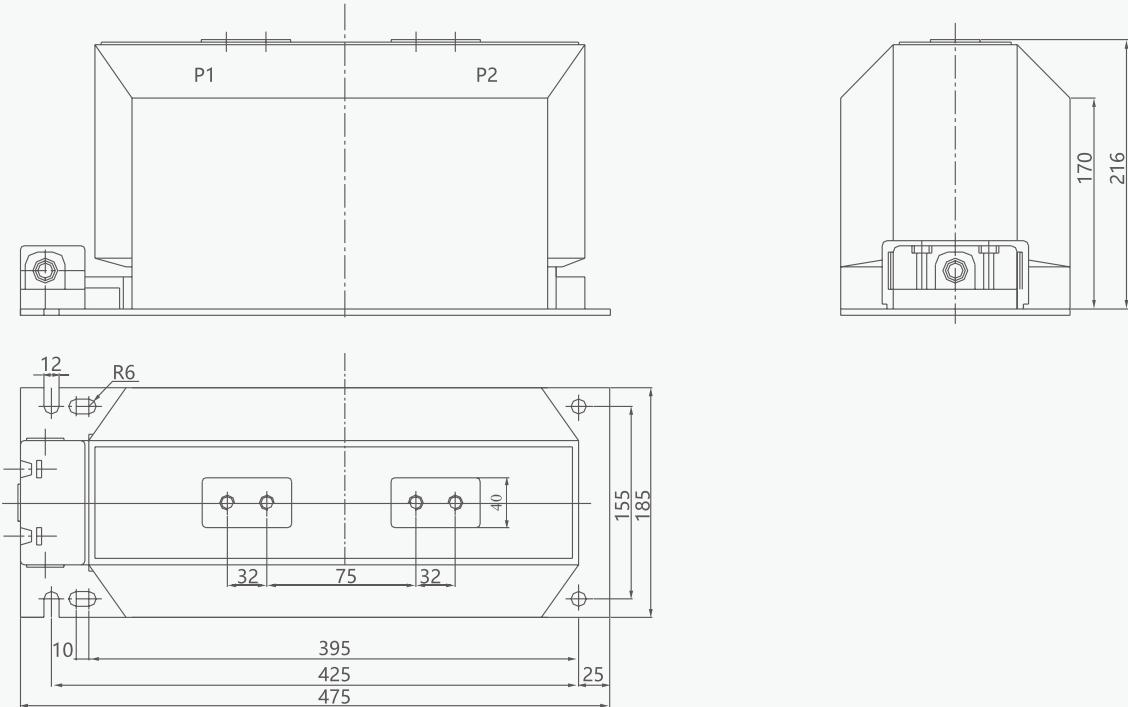
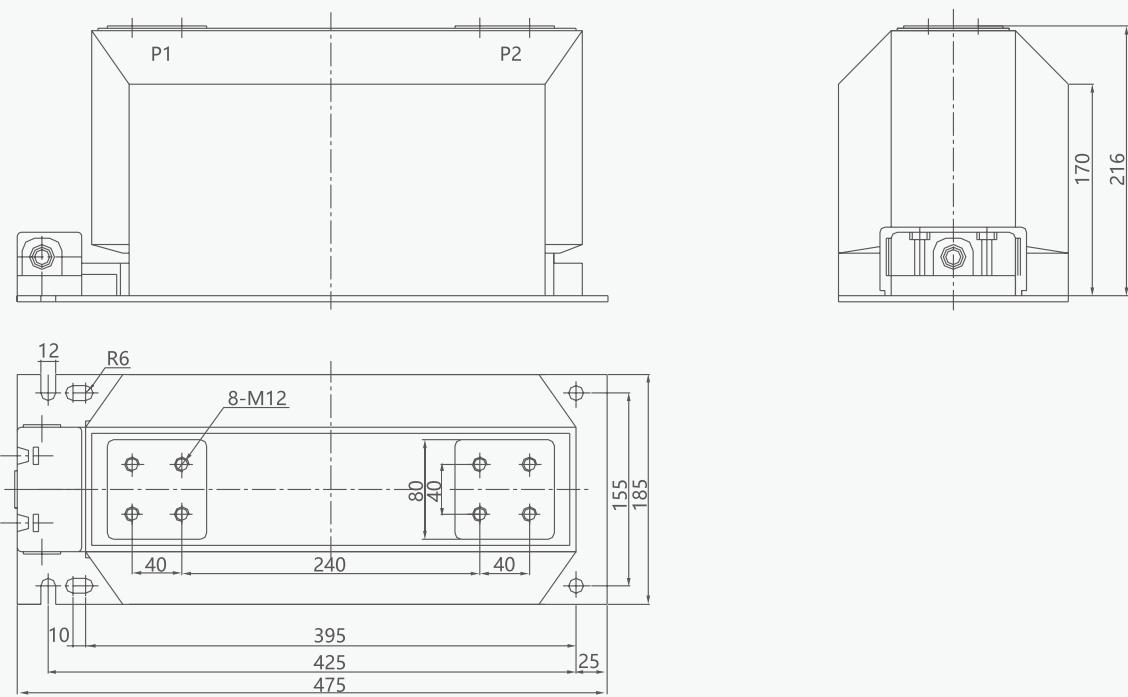


Fig 6 Overall and installation dimension of LZZBJ9-10A5G 1200-3000A current transformer



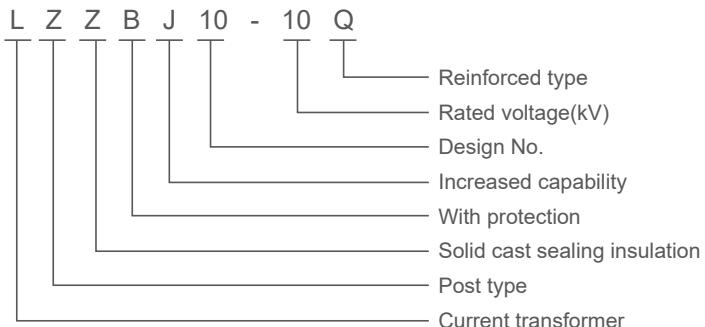
MV Transformer CT&PT

LZZBJ10-10Q Current Transformer

- LZZBJ10-10Q series is all work-condition post type current transformer with epoxy casting whole sealing insulation, used for measurement of current and electric energy as well as relay protection in the AC circuit of rated frequency 50Hz and rated voltage 10kV.
- Standard:IEC 61869-2

General



LZZBJ9-10 Current Transformer**Type designation****Operating conditions**

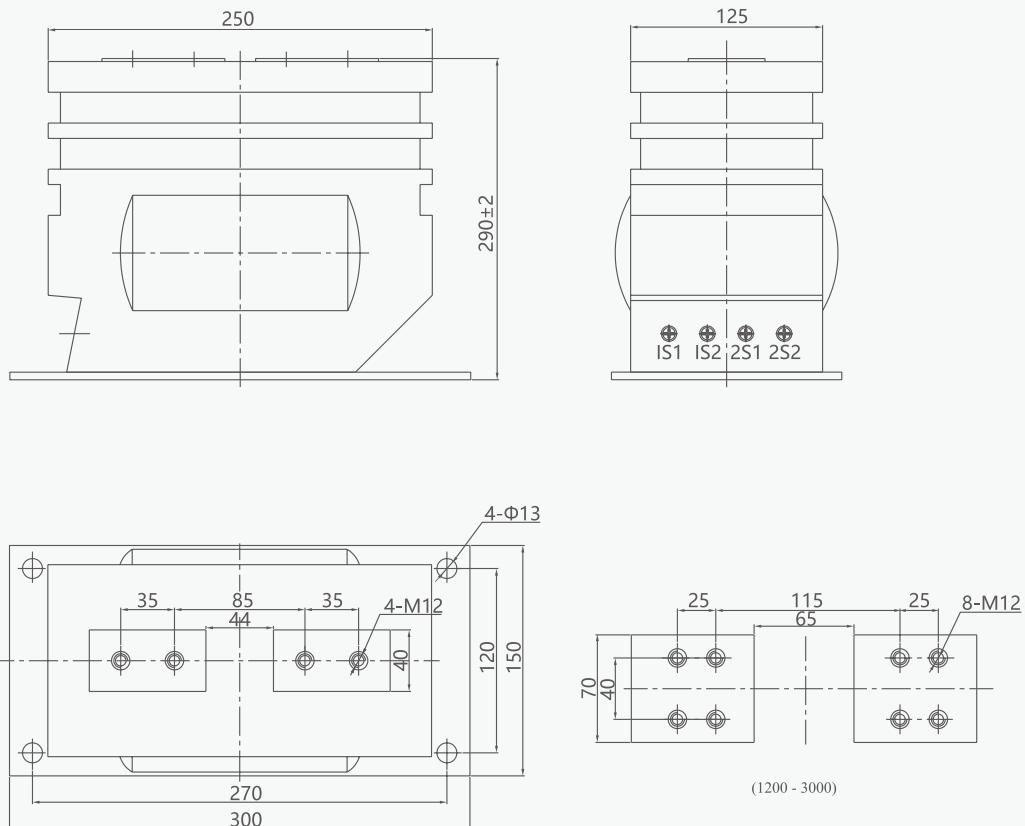
1. The performance of products is conformed to IEC standard and GB1208-2006
2. Current Transformer.
3. Rated insulation level: 12/42/75kV
4. Rated frequency: 50Hz
5. Rated secondary current: 5A, 1A
6. Partial discharge level: In conformity to GB5583-85 standard, its partial discharge is not more than 20PC.

Technical data

Rated primary current (A)	Accurate class combination	Rated Secondary Output(VA)				Rated Short-time thermal-current (KA virtual value)	Rated Dynamic Stability Current (KA virtual value)
		0.2,0.2S	0.5	10P10	10P15		
10	0.2S/10P 0.2/10P or 0.5S/10P 0.5/10P	10	15	20	15	2	5
15						3	7.5
20						4	10
30						6	15
40						8	20
50-60		10	15	25	20	21	52.5
50-60						45	112.5
75-100						45	112.5
150-200						63	130
300,400,500						63	130
300,400,500		25	20			80	160
600-800						80	160
1000,1200,1250						80	160
1500-2000						100	100
3000-3150						100	100
1500-2000						100	100
3000-3150						100	100

LZZBJ9-10 Current Transformer

Overall and mounting dimensions(mm)



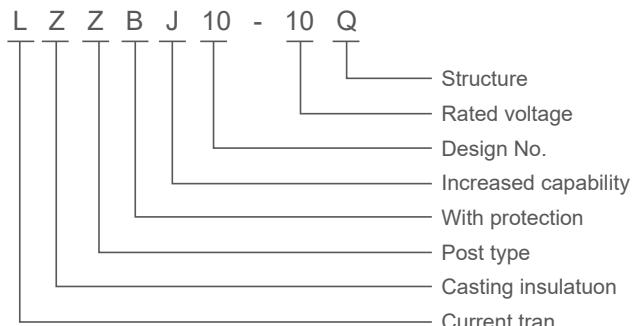
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LZZBJ18-10 Current Transformer

- This series of current transformers is epoxy resin vacuum casting fully-enclosed support-type, they adopt advanced materials and technology, they are used for current, power measurement and relay protection indoors alternate power system with frequency 50-60Hz, rated voltage 10kV and below. This series of products has the newest series super precision, super dynamic and thermal stability, large-capacity, number of secondary winding is 2-4, can be arbitrarily composed by different needs.
- Standard:IEC 61869-2

General



LZZBJ18-10 Current Transformer**Type designation****Operating conditions**

1. Rated insulation level: 10kV:12/42/75kV; 20kV:24/65/125kV
2. Power factor of load: $\cos\phi=0.8$ (lagging)
3. Rated secondary current: 5A(or 2A,1A)

LZZBJ18-10/150b/2 Type

Rated primary current (A)	1s thermal current (kA virtual value)	Dynamic standing current (kA peak)	Accuracy class combination (1S/2S)	Rated Secondary Output(VA)		
				0.2,0.2S	0.5	10P15
20	2	5	0.2/0.5/10P10 0.2/0.5/5P10 0.5/0.5/10P10 0.2/0.2/10P10 0.5/0.5/5P10 0.2/0.2/5P10	10	10	10
30	3	7.5				
40-50	5.4	13.5				
75	8.1	20.2				
100	10.8	27				
150	16.2	40.5				
200	24.3	60.7				
300	37.8	94.5				
400	48.6	121.5				
500	63	150				
600-630	63	150				
800-1000	100	250				
1200-1600	110	270				
2000	175	425				

LZZBJ18-10/185h/2 Type

Rated primary current (A)	1s thermal current (kA virtual value)	Dynamic standing current (kA peak)	Accuracy class combination (1S/2S)	Rated Secondary Output(VA)				
				0.2S	0.2	0.5	5P10 10P10	5P15 10P15
10-40	200l th	250l th	0.2/0.2 0.2/0.5 0.2/10P 0.5/10P 0.2/5P 0.5/5P	10	10	15	20	10
50-100	250l th	625l th						
150-300	45	100						
400-500	100	250						
600-1000	140	350						
1200-1600	170	425						
2000-3150	240	600						

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LZZBJ18-10 Current Transformer

LZZBJ18-10/150b/4 Type

Rated primary current (A)	1s thermal current (kA virtual value)	Dynamic standing current (kA peak)	Accuracy class combination (1S/2S)	Rated Secondary Output(VA)					
				0.2S	0.2	0.5	5P10 10P10	5P15 10P15	5P20 10P20
20-150	150lth	375lth	0.2/0.2 0.2/0.5 0.5/0.5 0.2/10P10 0.5/10P10 0.5/10P10	10	10	15	15	10	
200	36	90							
300	45	100							
400-500	63	150			15	20	15	10	10
600-630	63	150							
800-1000	100	250							
1200-1600	110	270							
2000	175	425							
2500	175	425							

LZZBJ18-10/150b/4 Type

Rated primary current (A)	1s thermal current (kA virtual value)	Dynamic standing current (kA peak)	Accuracy class combination (1S/2S)	Rated Secondary Output(VA)					
				0.2S	0.2	0.5	5P10 10P10	5P15 10P15	5P20 10P20
20-150	150lth	375lth	0.2(S)/0.2(S) 0.5/0.5 0.2(S)/10P(5P) 0.5/10P(5P)	10	10	15	20	30	15
200	36	90							
300	45	100							
400-500	63	150							
600-630	63	150							
800-1000	100	250							
1200-1600	110	270							
2000	175	425							
2500	175	425							

Model LZZBJ18-10/185h/4 type thermal standing current

Rated primary current (A)	10-40	50-100	150-300	400-500	600-1000	1200-1600	2000-3150
1s thermal current (kA virtual value)	200lth	250lth	45	100	140	170	240
Dynamic standing current (kA peak)	500lth	625lth	100	250	350	425	600

Model LZZBJ18-10/185h/4 combination of accuracy grade and corresponding secondary output

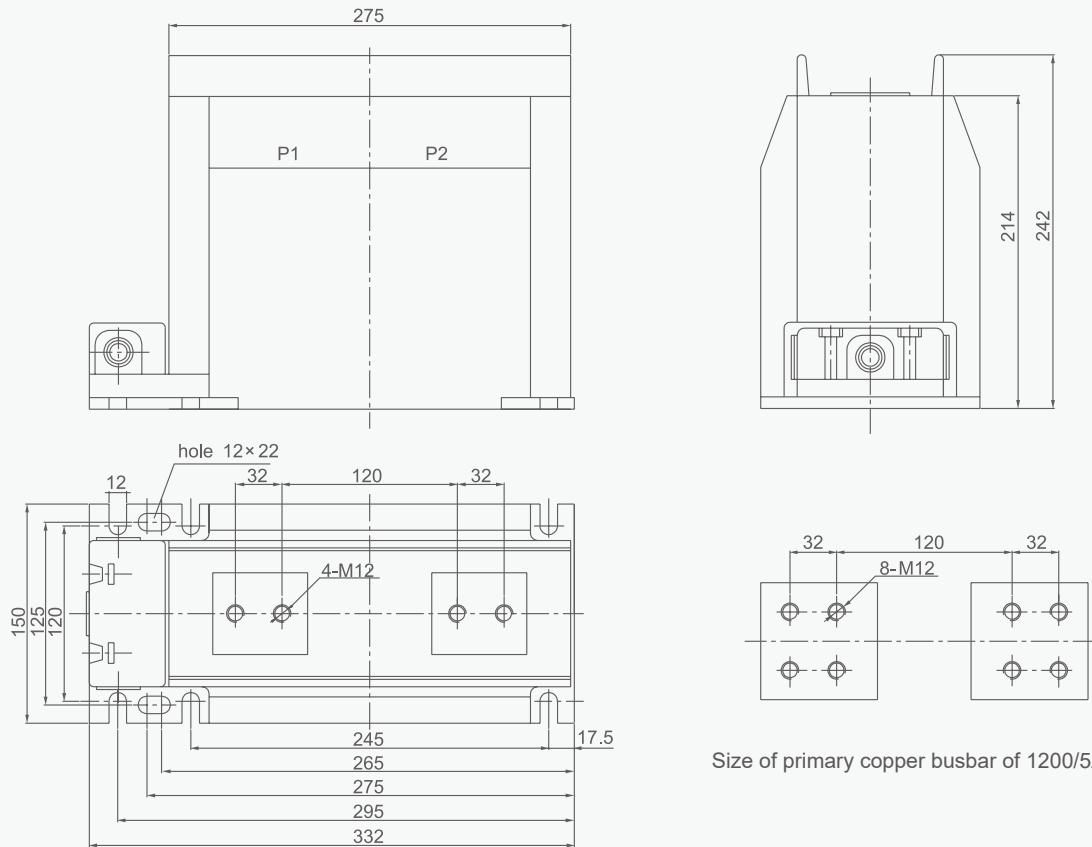
Accuracy class combination	10-200A						300-600A						800-1250A						800-1250A					
	0.2 (S)	0.2	0.5	10P 10	10P 15	10P 20	0.2 (S)	0.2	0.5	10P 10	10P 15	10P 20	0.2 (S)	0.2	0.5	10P 10	10P 15	10P 20	0.2 (S)	0.2	0.5	10P 10	10P 15	10P 20
0.2(S)/10P 0.5/10P 0.2(S)/0.2(S)/0.5/0.5	10	10	20	40	30	20	10	10	20	40	30	20	10	15	20	60	40	30	10	15	20	60	40	30
0.2(S)/0.5/10P	10	10	15	30	20	15	10	10	15	40	30	20	10	15	20	50	40	30	10	15	20	50	40	30
0.2(S)/10P/10P 0.5/10P/10P	10	10	15	20	15		10	10	15	30	20		10	15	15	30	20	15	10	15	15	50	30	20
0.2(S)/0.5/10P/10P	10	10	15	15			10	10	15	15			10	15	15	20	15		10	15	15	20	15	
0.2/0.2/0.5/10P	10	10	15	15			10	10	15	15			10	15	15	30	20		10	15	15	30	20	

MV Transformer CT&PT

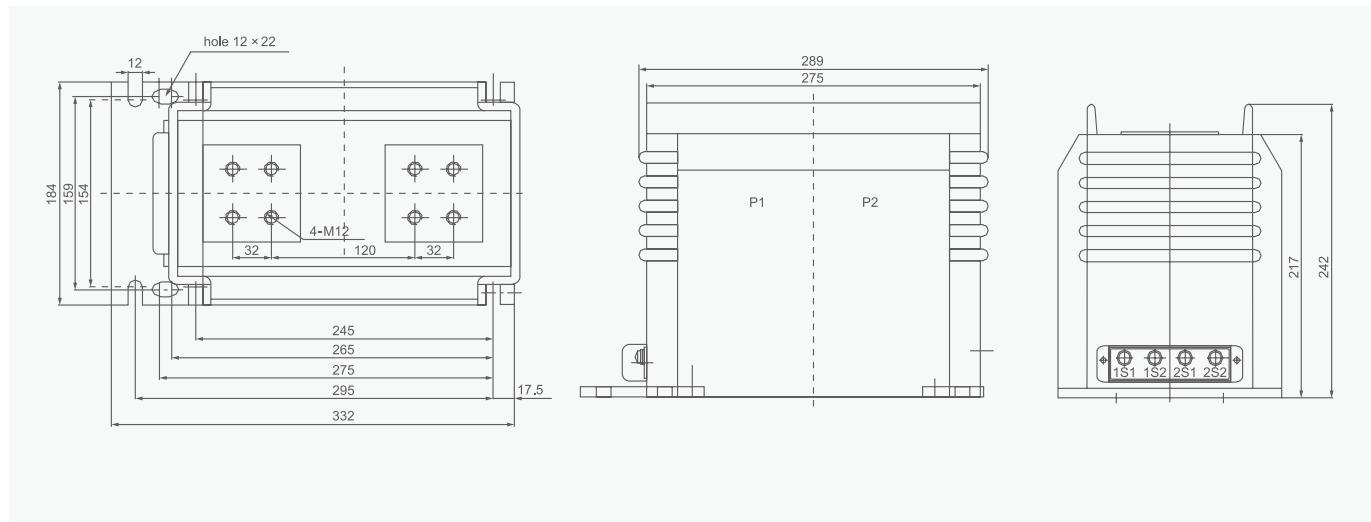
LZZBJ18-10 Current Transformer

Single ratio wiring diagram

LZZBJ18-10/150b/2 type(equivalent to AS12/150b/2S)



LZZBJ18-10/185h/2 type(equivalent to AS12/185h/2S)

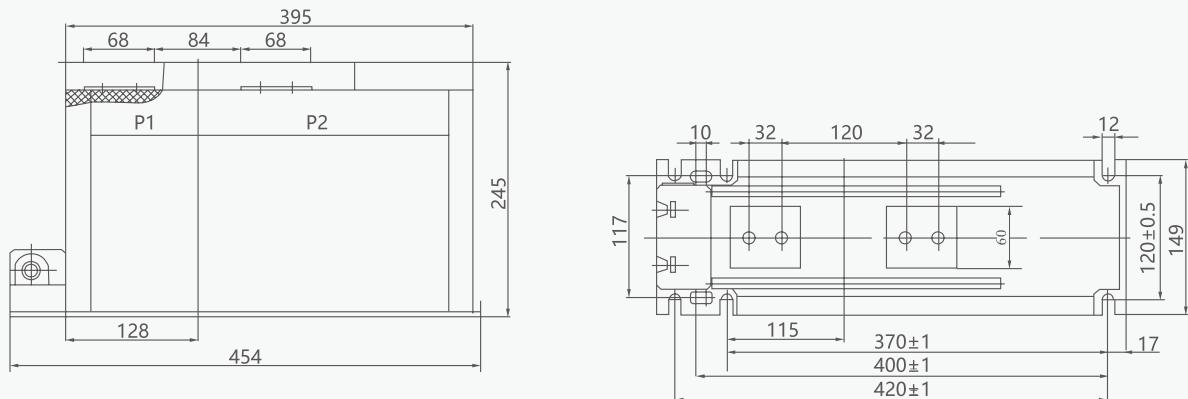


MV Transformer CT&PT

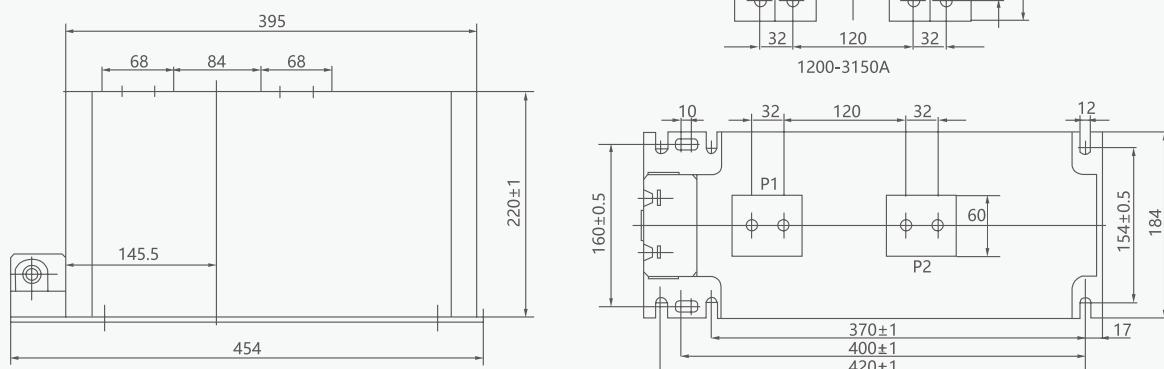
LZZBJ18-10 Current Transformer

Single ratio wiring diagram

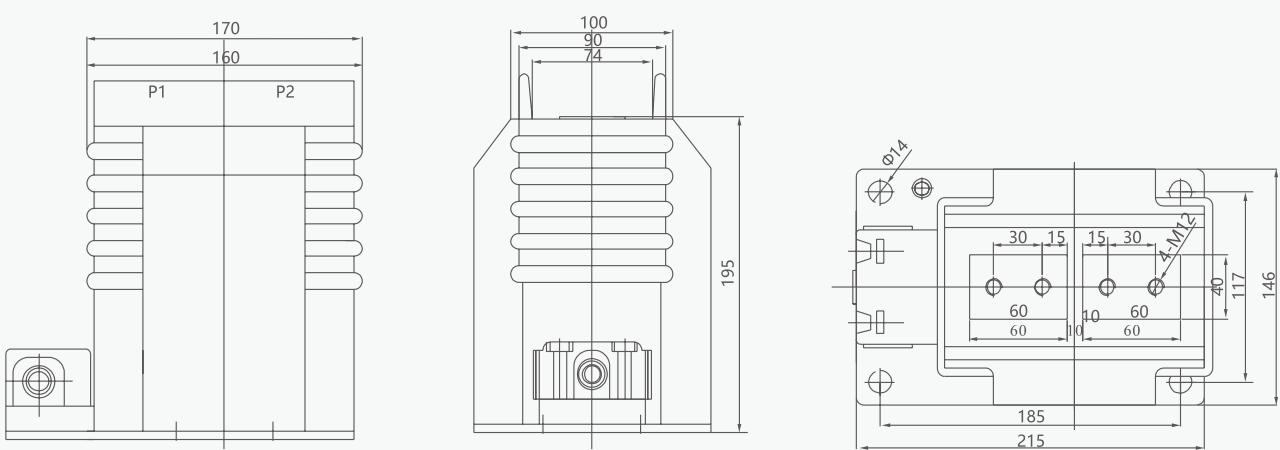
LZZBJ18-10/150b/4 type(equivalent to AS12/150b/4S)



LZZBJ18-10/185h/4 type(equivalent to AS12/185h/4S)



LZZBJ18-10 Single-winding mutual inductance electrical



MV Transformer CT&PT

LCT-2,3,4,7 Zero-sequence Current Transformer

- This zero-sequence current transformer has such characteristics as high precision, good linearity, reliable operation, easy installation, especially this transformer can be applied to system of zero-sequence current 1A and 2A while conventional zero-sequence transformer can not. The exterior design is two central-circle combined type, novel structure, beautiful and reasonable. The products can be used for power supply system in the fields of electric power, metallurgy, coal, petroleum, chemical industry, building material and other industries.
- Standard: IEC 61869-1

General



MV Transformer CT&PT

LCT-2,3,4,7 Zero-sequence Current Transformer

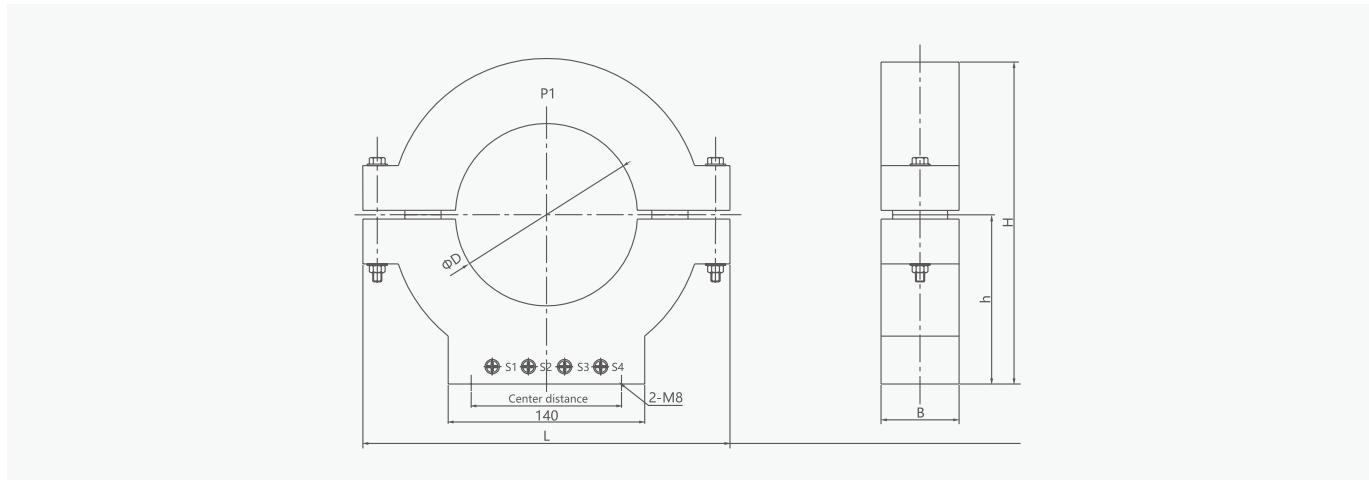
Operating conditions

1. Operating environment
 - a. Environmental temperature: -20°C~50°C;
 - b. Relative humidity: ≤90%
 - c. Atmospheric pressure: 80kpa~200kpa;
2. AC voltage: 66kV~4000kV;
3. Zero-sequence current: Primary side~36A (customize for 36A or above, secondary side 20~30mA)
4. Electric network frequency: 50Hz;
5. The terminal used with ML98 device-using explanation;

System primary zero-sequence current(A)	Selected terminal
1≤10<6	S1, S2
6≤10<12	S1, S3
12≤10<36	S1, S4

6. Secondary load: ≤2.5Ω

Overall and mounting dimensions(mm)



Type	Bore ΦD	Width L	Height H	Center height h	Thickness B	Mounting size and bolt spec.(M8×25)
LCT-7	Φ185	338	305	165	60	105±0.5
LCT-5	Φ150	300	280	150	55	105±0.5
LCT-4	Φ120	300	280	150	55	105±0.5
LCT-3	Φ100	260	230	123	55	105±0.5
LCT-2	Φ80	210	200	106	55	110±0.5

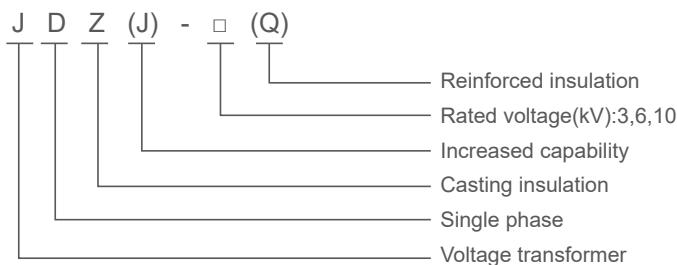
MV Transformer CT&PT

JDZ(J)-3,6,10(Q) Voltage Transformer

- JDZ3-3,6,10(Q) type single-phase double coil voltage transformer of epoxy casting insulation for indoor device use, is used for measurement of voltage and electric energy, relay protection in the AC circuit of rated frequency 50Hz as well as other control device power. (refer to figure 1 wiring diagram)
- JDZ(J)-3,6,10(Q) type single-phase double coil voltage transformer of epoxy casting insulation for indoor device use, is used for measurement of voltage and electric energy, relay protection in neutral non-direct earthing system of rated frequency 50Hz as well as for other control device power(refer to figure 2 wiring diagram)
- Standard:IEC 61869-3

General



JDZ(J)-3,6,10(Q) Voltage Transformer**Type designation****Technical data**

Type	Short circuit current(A)	
	IS1	IS2
JDZ-3	3.125	93.75
JDZ-6	1.52	91.49
JDZ-6(0.2 class)	1.81	108.54

Type	Short circuit current(A)	
	IS1	IS2
JDZ-10	1.30	130
JDZ-10(0.2 class)	1.32	132
JDZJ-3	2.15	64.78

Type	Short circuit current(A)	
	IS1	IS2
JDZJ-6	1.32	79.3
JDZJ-6	0.97	97
JDZJ-10(0.2 class)	0.97	97

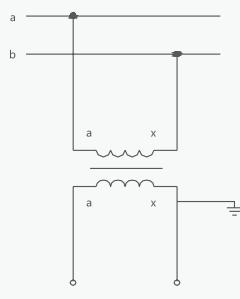


MV Transformer CT&PT

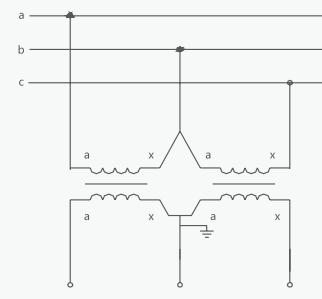
JDZ(J)-3,6,10(Q) Voltage Transformer

Type	Rated voltage ratio(V)	Rated secondary output(VA)							Ultimate output (VA)	Rated insulation level(VA)	Exterior creepage distance(mm)
		0.2 class	0.5 class	1 class	3 class	0.2/0.2	0.5/0.5	6p			
JDZ-3(Q)	1000/100	20	30	50	80	20/20	30/30		200	3.6/23/40	205
JDZ-6(Q)	2000/100	30	50	80	200	20/20	30/30		400	7.2/32/60	250
JDZ-10(Q)	3000/100		80	150	300	25/25	50/50		500	12/42/75	250
JDZJ-3(Q)	$\frac{3000}{\sqrt{3}} / \frac{100}{\sqrt{3}} / \frac{100}{\sqrt{3}}$		30	50	80			50	200	3.6/23/40	205
JDZJ-6(Q)	$\frac{6000}{\sqrt{3}} / \frac{100}{\sqrt{3}} / \frac{100}{\sqrt{3}}$	20	50	80	200			50	400	7.2/32/60	205
JDZJ-10(Q)	$\frac{10000}{\sqrt{3}} / \frac{100}{\sqrt{3}} / \frac{100}{\sqrt{3}}$	20	50	80	200				400	12/42/75	250

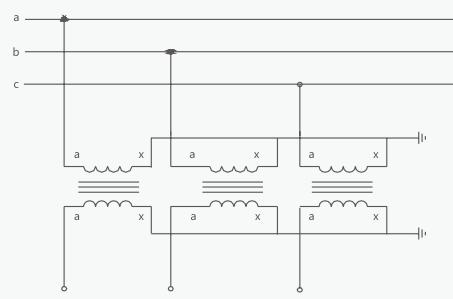
Overall and mounting dimensions(mm)



JDZ Single-phase

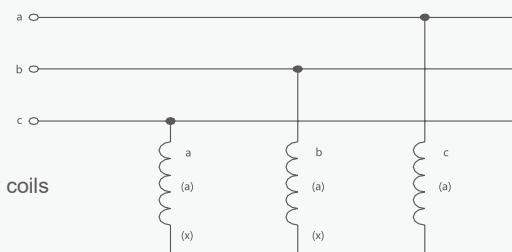


Two JDZ transformers connected into V shape

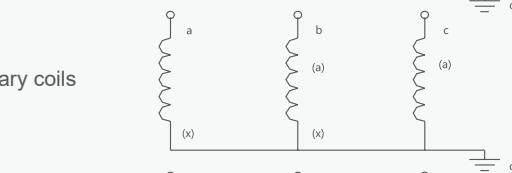


Three JDZ transformers connected into Y shape

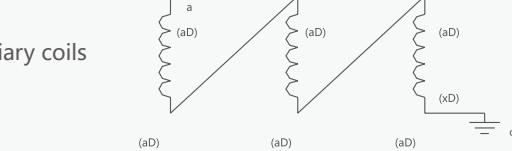
Diagram 1 JDZ-3,6,10(q) wiring diagram



Connection diagram of primary coils



Connection diagram of secondary coils



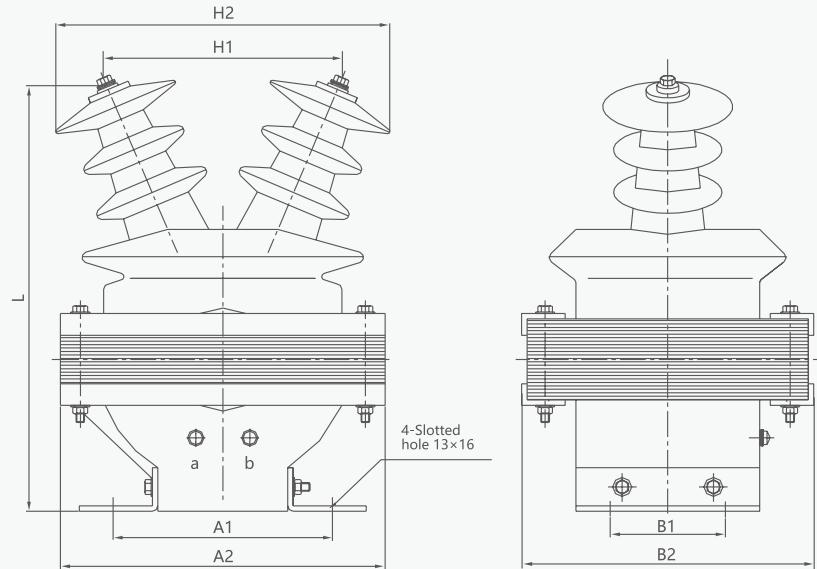
Connection diagram of auxiliary coils

Diagram 1 JDZJ-3,6,10(q) wiring diagram

MV Transformer CT&PT

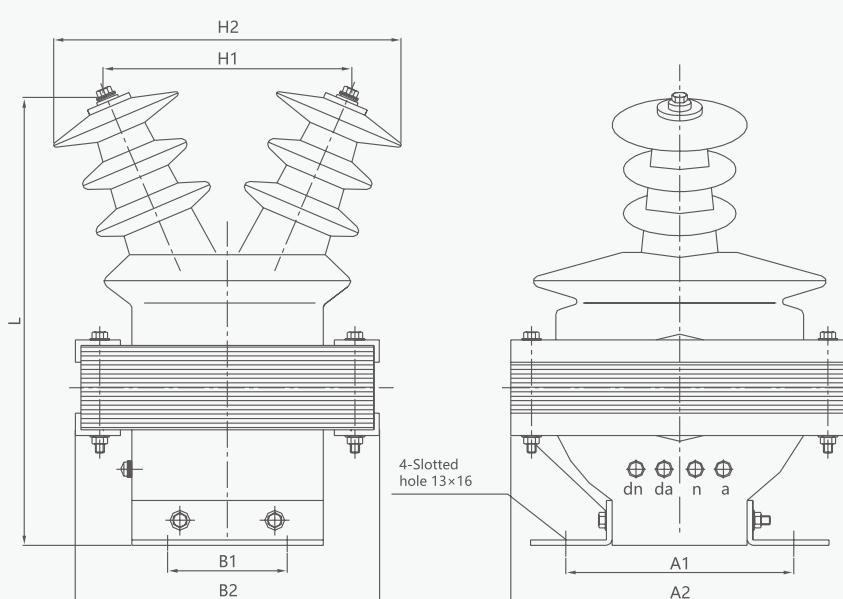
JDZ(J)-3,6,10(Q) Voltage Transformer

JDZ-3,6,10(Q)



Type	H1 (mm)	H2 (mm)	L (mm)	A1 (mm)	A2 (mm)	B1 (mm)	B2 (mm)
JDZ-10(Q)	180	250	305	170	236	90	207
JDZ-3,6(Q)	160	215	275	170	220	90	190

JDZJ-3,6,10(Q)



Type	H1 (mm)	H2 (mm)	L (mm)	A1 (mm)	A2 (mm)	B1 (mm)	B2 (mm)
JDZJ-10(Q)	180	250	90	207	170	238	207
JDZJ-3,6(Q)	160	215	90	190	170	220	190

MV Transformer CT&PT

JDZ8-3,6,10 Voltage Transformer

- JDZ8-3, 6, and 10 voltage transformers are single-phase epoxy resin cast insulation fully enclosed products, suitable for use in power systems with non effectively grounded neutral points at rated frequencies of 50HZ or 60HZ and rated voltages of 3KV, 6KV, and 10KV for energy metering, voltage monitoring, and relay protection
- Standards:IEC 61869-3

General



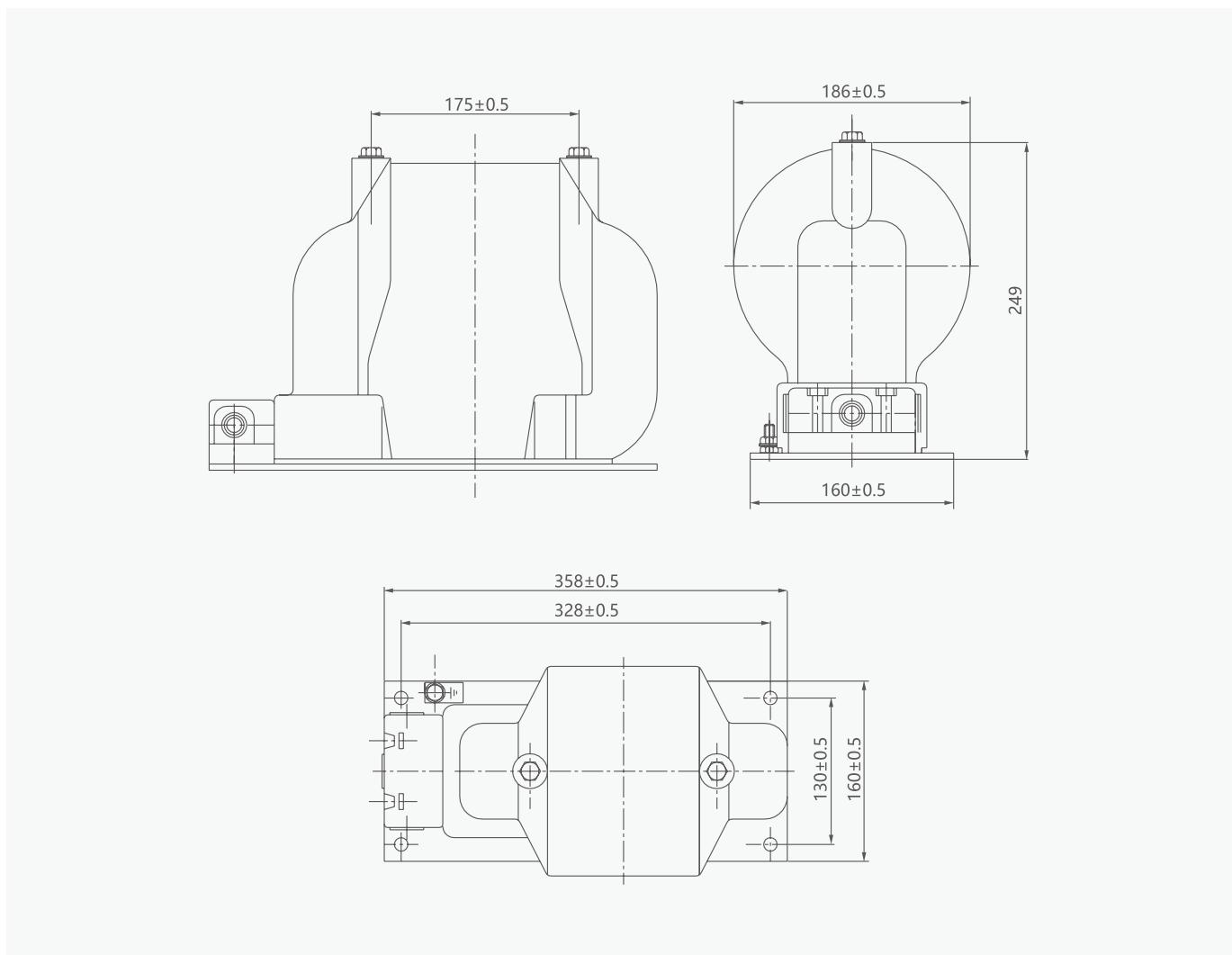
JDZ8-3,6,10 Voltage Transformer**Technical data**

The voltage transformer is in accordance with GB1207 and IEC186 standards...

Type	Rated frequency (Hz)	Voltage ratio (V)	Accuracy class	Rated output (VA)	Ultimate output (VA)	Rated insulation level(kV)
JDZ8-3	50	3000/100	0.2, 0.5	40, 80	600~1000	3.6/24/40
JDZ8-6	50	6000/100	0.2, 0.5	40, 80	600~1000	7.2/32/60
JDZ8-10	50	10000/100	0.2, 0.5	40, 80	600~1000	12/42/75

Note:

If user's data goes beyond the above-mentioned scope, they may be subjected to an agreement between manufacturer and purchaser.
Rated put and its relative accuracy class are alternative.

Overall and mounting dimensions(mm)

MV Transformer CT&PT

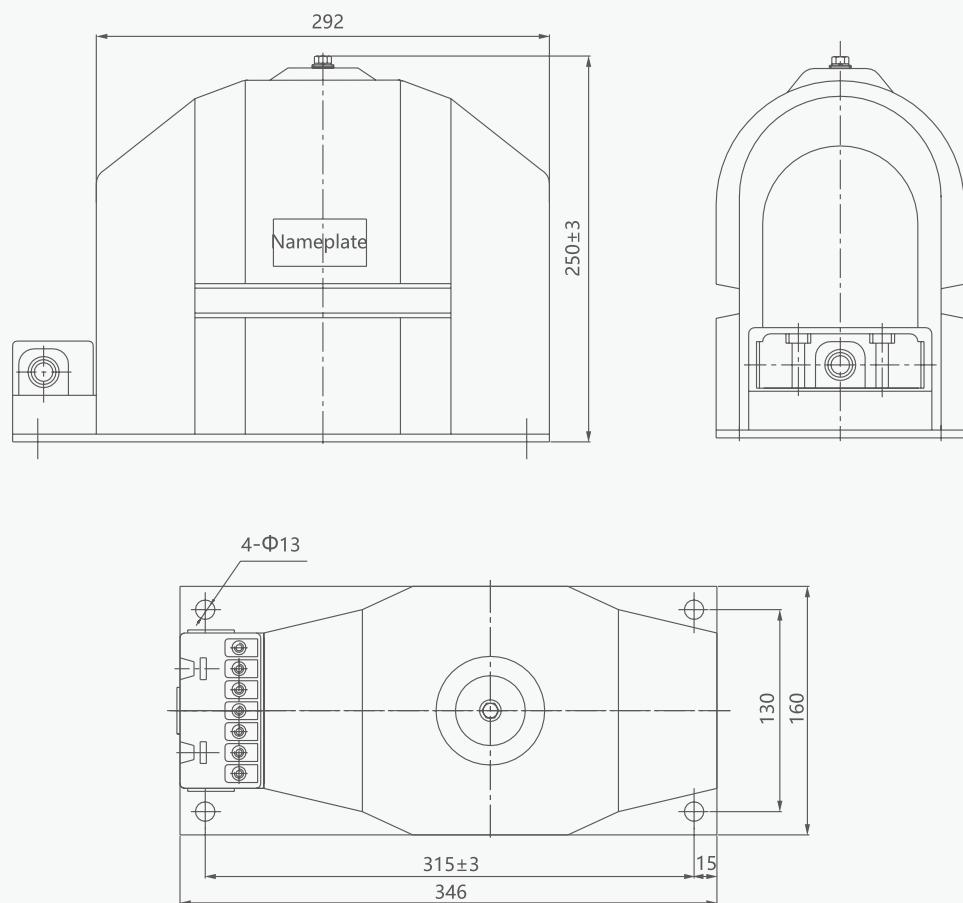
JDZ8-3,6,10 Voltage Transformer

Type	Rated frequency (Hz)	Rated voltage ratio(V)	Accuracy class	Rated output (VA)	Ultimate output (VA)	Rated insulation level(kV)
JDZX8-3	50	$\frac{3000}{\sqrt{3}} / \frac{100}{\sqrt{3}} / \frac{100}{\sqrt{3}}$	0.2/6P	30/100	500	3.6/24/40
JDZX8-6	50	$\frac{6000}{\sqrt{3}} / \frac{100}{\sqrt{3}} / \frac{100}{\sqrt{3}}$	0.2/6P	30/100	500	7.2/32/60
JDZX8-10	50	$\frac{10000}{\sqrt{3}} / \frac{100}{\sqrt{3}} / \frac{100}{\sqrt{3}}$	0.2/6P	30/100	500	12/42/75

Note:

If user's data goes beyond the above-mentioned scope, they may be subjected to an agreement between manufacturer and purchaser.
Rated put and its relative accuracy class are alternative.

Overall and mounting dimensions(mm)



MV Transformer CT&PT

JDZ□□18(10)-3,6,10 Voltage Transformer

- The voltage transform is the type of cast resin insulation and full enclosed, used for electric energy metering, voltage control and relay protection in the power systems of rated voltage 3kV, 6kV, and 10kV or below.
- Standard:IEC 61869-3

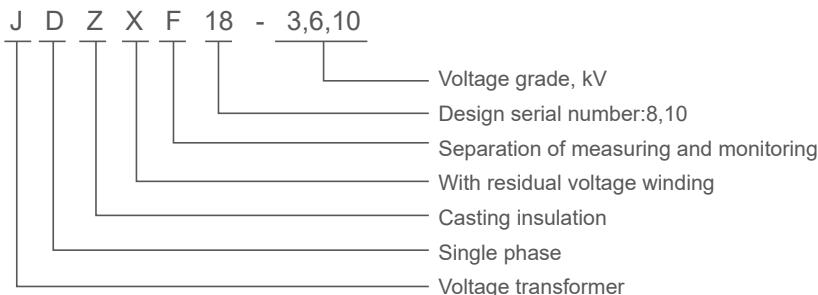
General



MV Transformer CT&PT

JDZ□□18(10)-3,6,10 Voltage Transformer

Type designation



Technical data

1. Technical data form.
2. Partial discharge is in line with GB1207-2006 voltage transformer.
3. Anti-pollution degree: see fig.

Technical data

Type	Rated voltage ratio(V)	Rated output(VA)				Ultimate output(VA)	IS2
		0.2	0.5	1	6P		
JDZ18-3 RZL10	3000/100	15	30	60		500	3.6/25/40
JDZ18-6 RZL10	6000/100						7.2/32/60
JDZ18-10 RZL10	10000/100						12/42/75
JDZF18-3	3000/100/100	10	10	30		2×250	3.6/25/40
JDZF18-6	6000/100/100						7.2/32/60
JDZF18-10	10000/100/100						12/42/75
JDZX18-3 REL10	3000/ $\sqrt{3}$ /100/ $\sqrt{3}$ /100/3"	15	30	100		200	3.6/25/40
JDZX18-6 REL10	6000/ $\sqrt{3}$ /100/ $\sqrt{3}$ /100/3						7.2/32/60
JDZX18-10 REL10	10000/ $\sqrt{3}$ /100/ $\sqrt{3}$ /100/3						12/42/75
JDZXF18-3	3000/ $\sqrt{3}$ /100/ $\sqrt{3}$ /100/ $\sqrt{3}$ /100/3	10	10	60		200	3.6/25/40
JDZXF18-6	6000/ $\sqrt{3}$ /100/ $\sqrt{3}$ /100/ $\sqrt{3}$ /100/3						7.2/32/60
JDZXF18-10	10000/ $\sqrt{3}$ /100/ $\sqrt{3}$ /100/ $\sqrt{3}$ /100/3						12/42/75

MV Transformer CT&PT

JDZ□□18(10)-3,6,10 Voltage Transformer

Overall and mounting dimensions(mm)

Chart 1 Outline and installation size of JDZ(F)18-6,10B

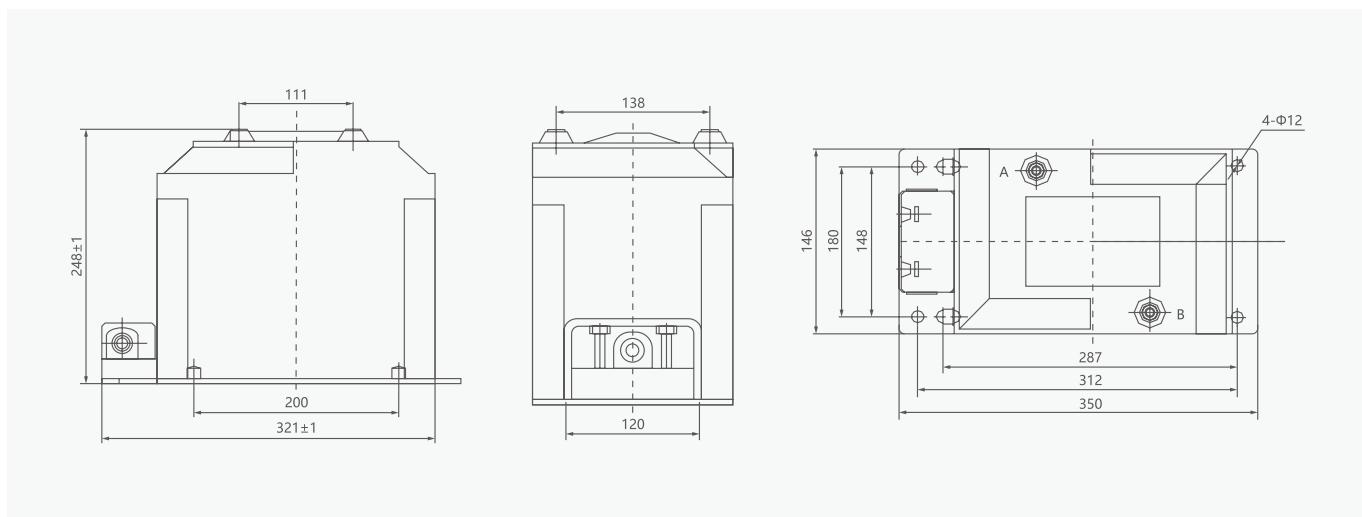


Chart 2 Outline and installation size of JDZ10-6,10(RZL)

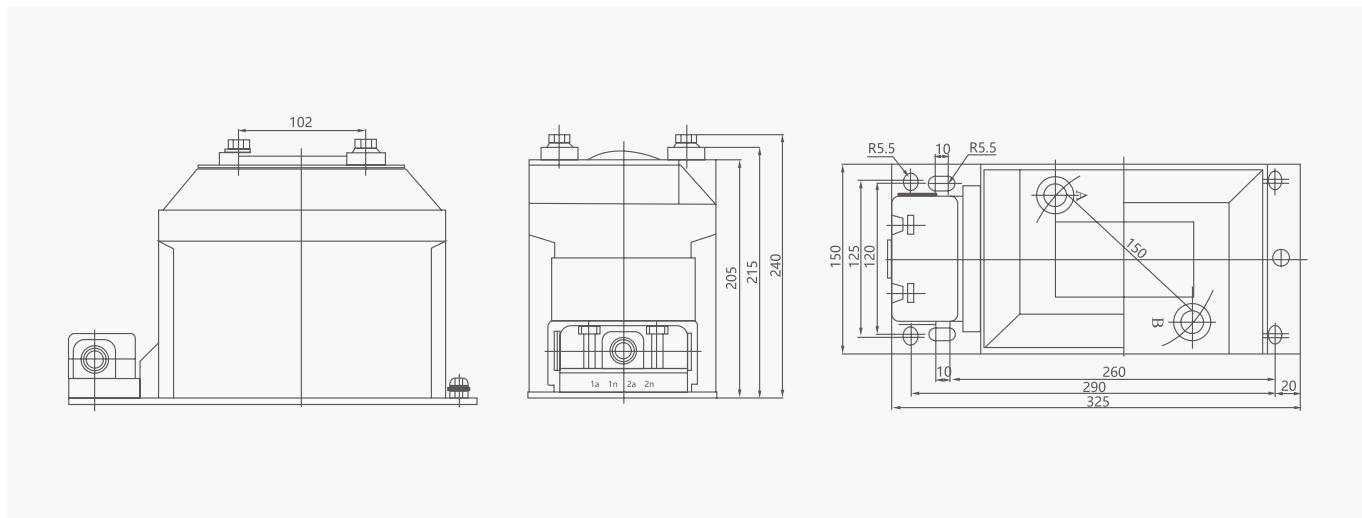
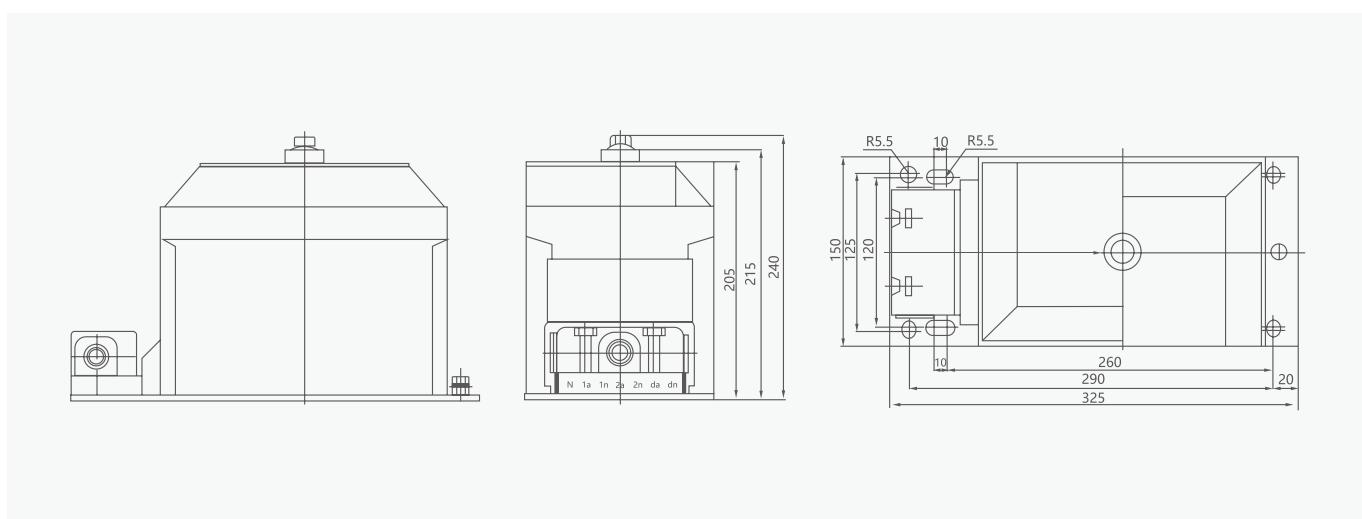


Chart 3 Outline and installation size of JDZX10-6,10(REL10)



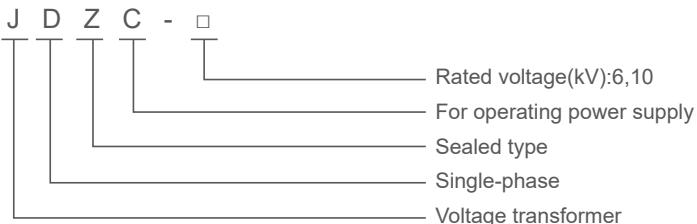
MV Transformer CT&PT

JDZC-6,10 Voltage Transformer

- JDZC-6,10 type voltage transformer is the indoor device of epoxy resin cast insulation, applied to electric measurement and electric protection in the electric system of rated frequency 50Hz and rated voltage 10kV.
- Standard:IEC 61869-3

General



JDZC-6,10 Voltage Transformer**Type designation****Structure**

This transformer is the type of full insulation, its primary winding two terminals that are checked according to full insulation level, distributed on both sides of casting body top. It is mainly made up of three part; iron core, secondary winding and primary winding which are all encapsulated in the epoxy resin casting body, featured with stable electric performance and perfect damp proof property.

Operating conditions

1. Equipment category: Indoor
2. Environmental temperature: Max temperature +40°C, Min temperature -5°C
3. There shall not be stains and corrosive or explosive mediums that seriously affect the insulation of transformer in the air.

Technical data

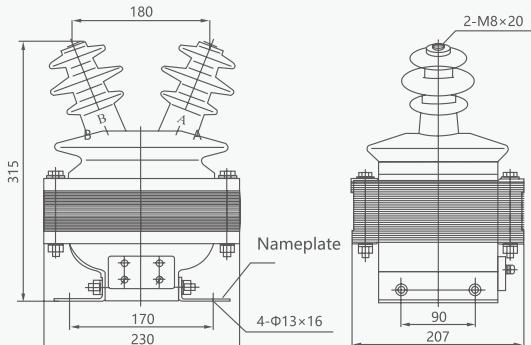
Type	Rated voltage ratio(V)	Rated secondary output(VA)	Accuracy classes combination		Rated insulation level(kV)	Rated insulation level(kV)
			1a1b(100V)	2a2b(220V)		
JDZC-10	60000/100/220	30	700	0.5/3	"7.2/32/60 12/42/75"	3.6/24/40 7.2/32/60 12/42/75
			50	800,1000		
			80	2000,3000		

MV Transformer CT&PT

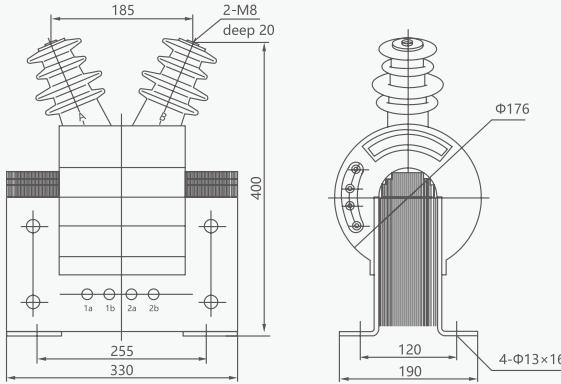
JDZC-6,10 Voltage Transformer

Overall and mounting dimensions(mm)

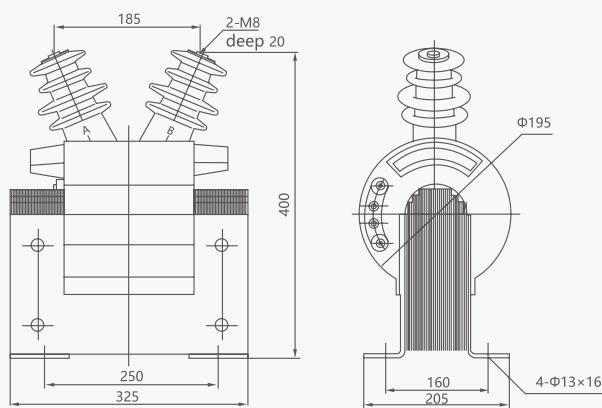
700VA



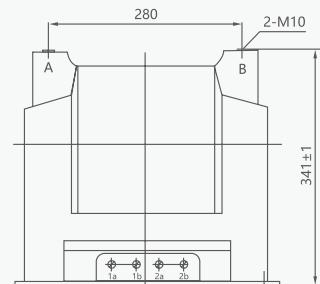
800-1000VA



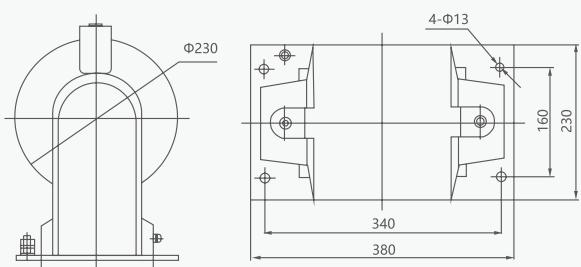
2000VA



3000VA



3000VA



Wiring diagram

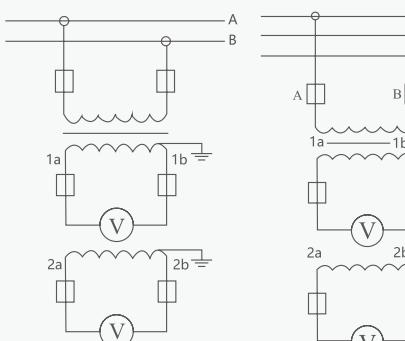


Figure 1

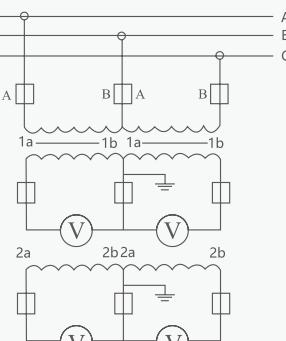


Figure 2

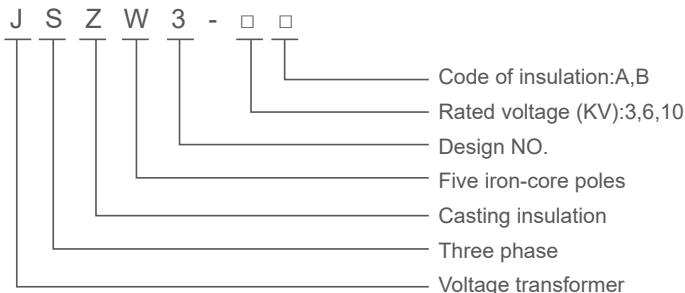
MV Transformer CT&PT

JSZW3-3,6,10 Semi-enclosure Three Phase Voltage Transformer

- This model voltage transformer is semi-casting type, with small size and good climate adaptability. The iron-core of the transformer applies core type side-iron structure, and made of high-quality silicon steel plate by cold rolling and exposing in the air, the primary winding, secondary winding and residual voltage winding wound onto the iron-core concentrically and cast with epoxy resin, the three phases cast and fixed together, the primary winding and terminal A is fully insulated and terminal N is not fully insulated. The wiring please refers to Diagram 1.
- It has two types: type A and type B according to insulation, type A is installed on the side and the insulation hole is on the iron-core clamp, type B has a base for installation.

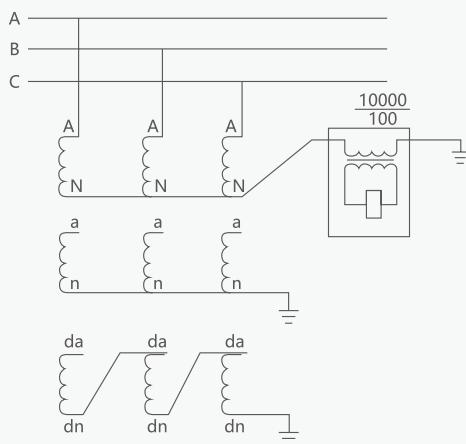
General



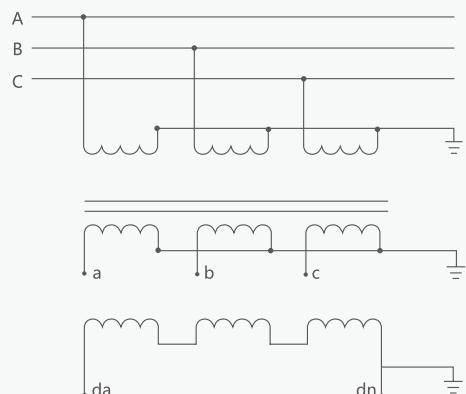
JSZW3-3,6,10 Semi-enclosure Three Phase Voltage Transformer**Type designation****Technical data**

1. Standard: GB1207-2006 voltage transformer
2. Technical parameter form
3. The creepage of product surface comply with Grade II of pollution.
4. Other technical parameter please refers to table below:

Type	Rated voltage ratio (V)	Accuracy class combination	Rated output (VA)						Ultimate output (VA)	Voltage withstand test (KV)	
			0.2	0.5	1	3	6	Inductive voltage withstand of primary winding		Voltage withstand of power Frequency of secondary winding	
JSZW3-3	3000/ $\sqrt{3}$ /100/ $\sqrt{3}$ /100/3	0.5/6P		90	150	300	75	600	18		2
JSZW3-6	6000/ $\sqrt{3}$ /100/ $\sqrt{3}$ /100/3	1/6P		150	240	600	100	1000	23		2
JSZW3-10	10000/ $\sqrt{3}$ /100/ $\sqrt{3}$ /100/3	3/6P		150	240	600	100	1000	32		2

Overall and mounting dimensions(mm)

Wiring diagram for model JSZW-3,6,10
anti-resonance three-phase circuit

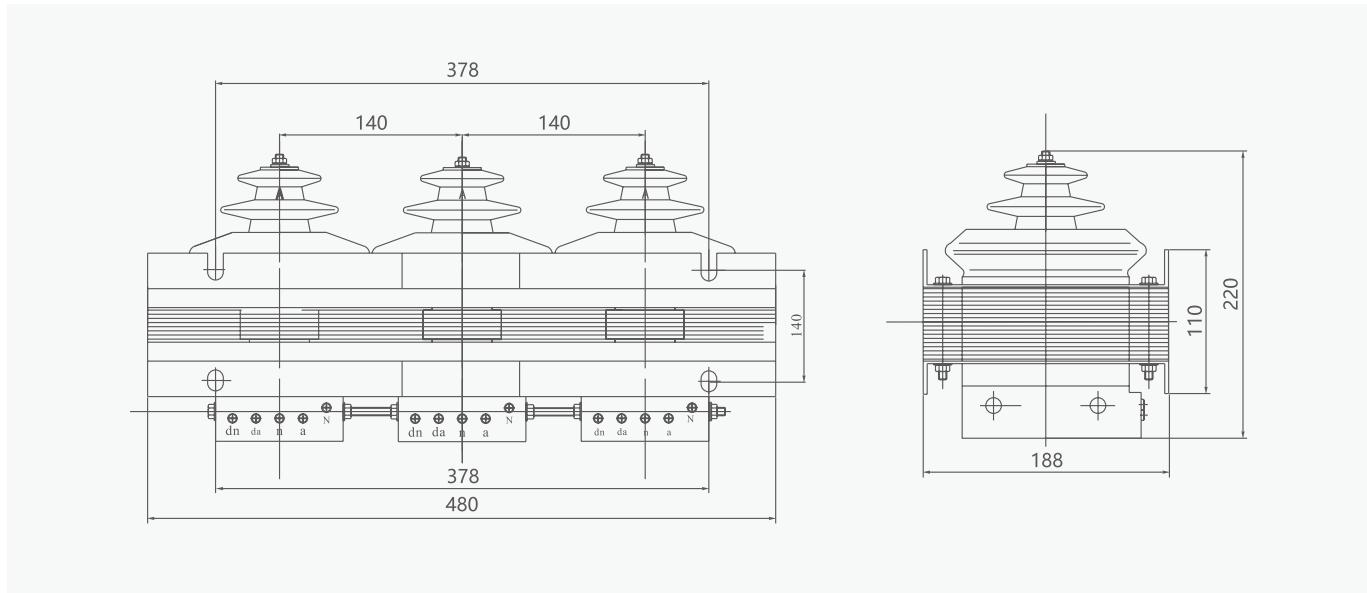


Regular wiring diagram for
model JSZW-3,6,10

MV Transformer CT&PT

JSZW3-3,6,10 Semi-enclosure Three Phase Voltage Transformer

JSZW-3,6,10KV



MV Fuse



MV Fuse

XRNP Current-limiting Fuses for Voltage Transformer Protection

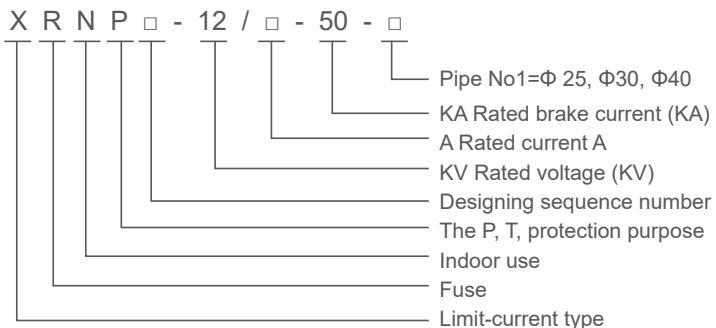
- This product can be used in indoor system of AC50Hz and rated voltage of 3.6-40.5KV to protect the voltage mutual-inductor from over loading and circuit break.(tested by-inductor from overloading and circ-uit break.(Tested by National high-voltage quality Supervising and Testing Center,in accordance with IEC282-1).

General



XRNP Current-limiting Fuses for Voltage Transformer Protection

Type designation



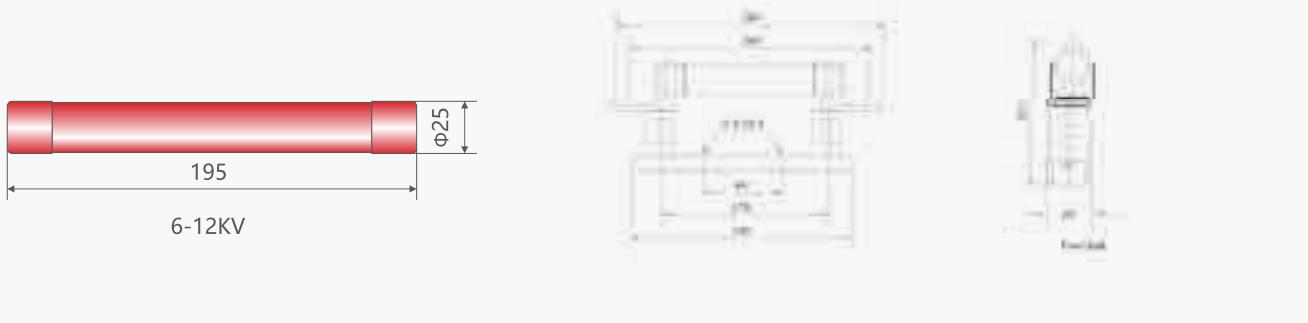
Type	Rated voltage (Kv)	Rated current(A)	Rated break current (KA)	Fused tube size (mm)
XRNP1	3.6, 7.2, 12	0.2, 0.3, 0.5, 1, 2, 3.15	50	Φ25*195
	24	0.2, 0.3, 0.5, 1, 2, 3.15	50	Φ25*354
	40.5	0.2, 0.3, 0.5, 1, 2, 3.15	31.5	Φ25*465
XRNP3	40.5	0.2, 0.3, 0.5, 1, 2, 3.15, 4, 5	31.5	Φ30*465
XRNP6	40.5	0.2, 0.3, 0.5, 1, 2, 3.15, 4, 5	31.5	Φ40*440

MV Fuse

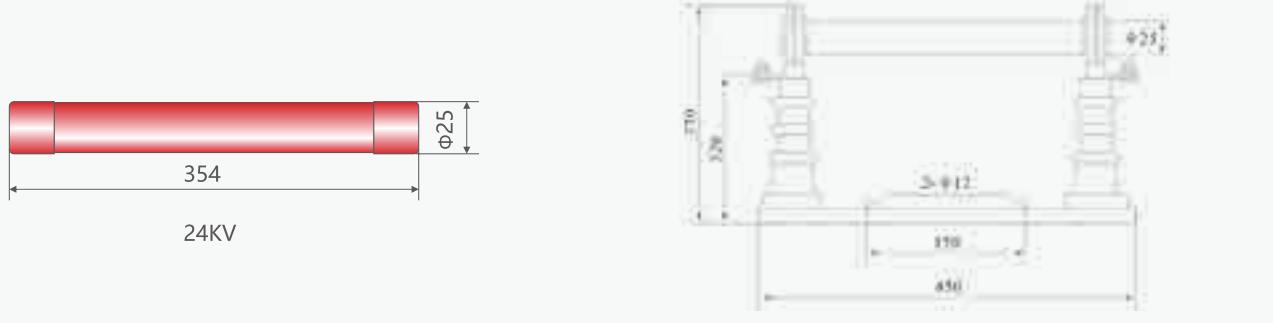
XRNP Current-limiting Fuses for Voltage Transformer Protection

Overall and mounting dimensions(mm)

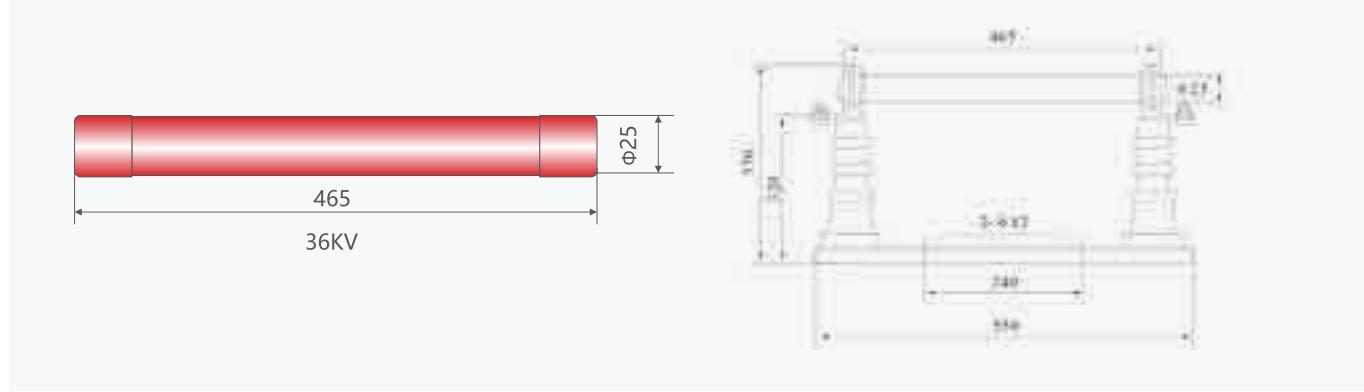
XRNP1-12/□-□



XRNP1-24/□-□

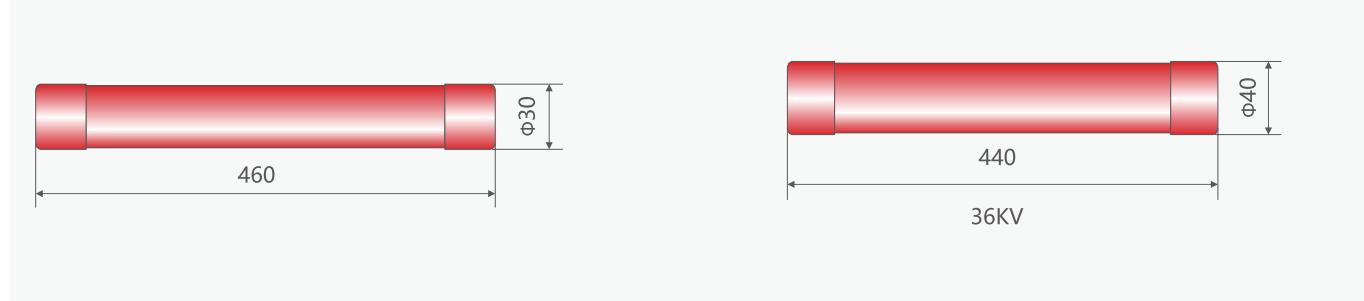


XRNP1-40.5/□-□



XRNP3-40.5/□-□

XBNP6-40 5/□-□



MV Fuse

XRNT Current-limiting Fuses for Transformer Protection

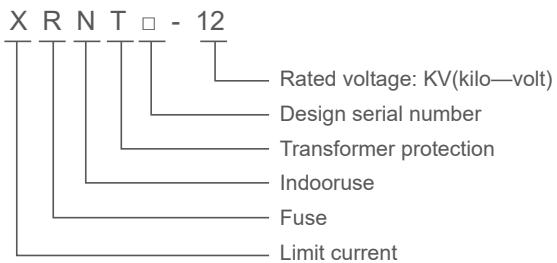
- It can be used in indoor system of 50HZ and rated voltage of 3.6KV, 7.2KV, 12KV, 24KV, 40.5KV;Used together with other switch facilities such as loading switches, vacuum contactors, it can protect electric transformers and other electric facilities against overloading or circuit break. It is also a necessary accessory for high-voltage switchbox, circular circuit cabinet, high / Low voltage top-loading transformer substation.

General



XRNT Current-limiting Fuses for Transformer Protection

Type designation



Technical data

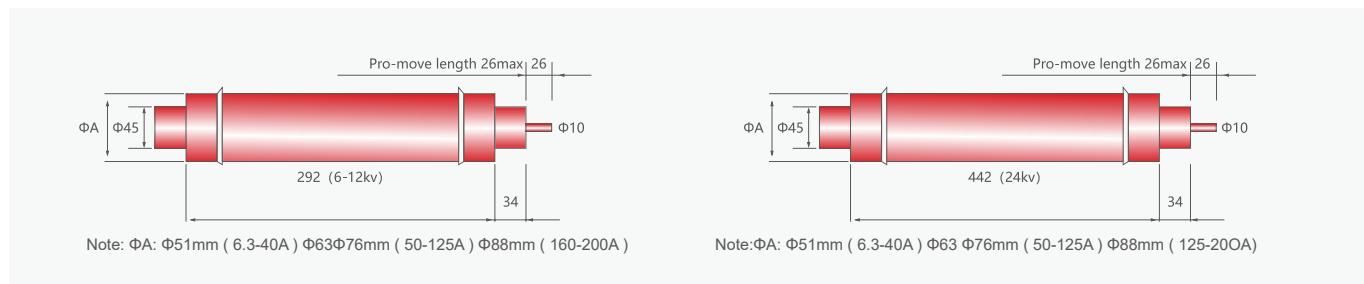
Type	Rated voltage(Kv)	Rated current(A)	Dimensions
XRNT-12	12	40	3.15, 6.3, 10, 16, 20, 25, 31.5, 40
XRNT-12	12	100	50, 63, 71, 80, 100, (125)
XRNT-12	12	125	125, 160, 200, 250
XRNT-24	24	200	3.15, 6.3, 10, 16, 20, 25, 31.5, 40, 50, 63, 80, 100, 125, 160, 200
XRNT--40.5	40.5	125	3.15, 6.3, 10, 16, 20, 25, 31.5, 40, 50, 63, 80, 100, 125

MV Fuse

XRNT Current-limiting Fuses for Transformer Protection

Overall and mounting dimensions(mm)

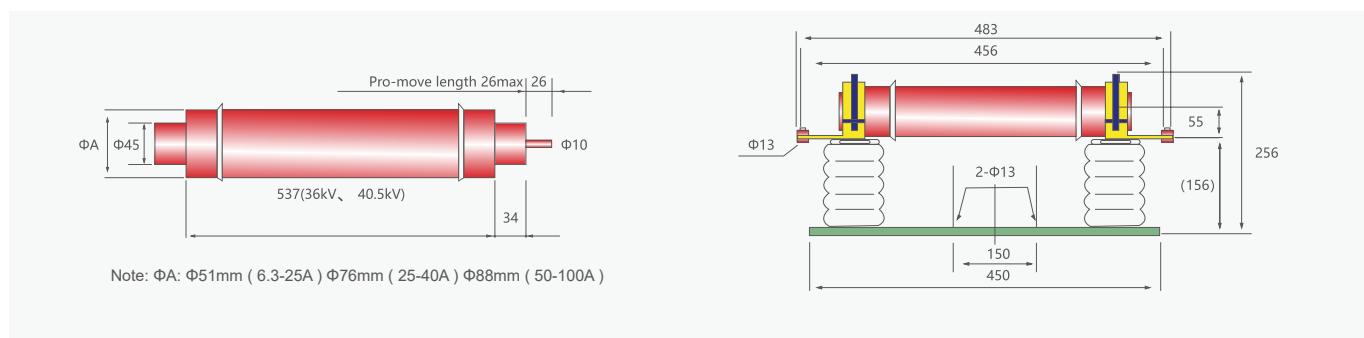
Chat1/a link XRNT-12Kv



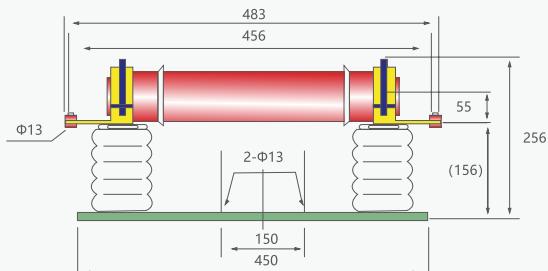
Chat2/a link XRNT \square -24Kv



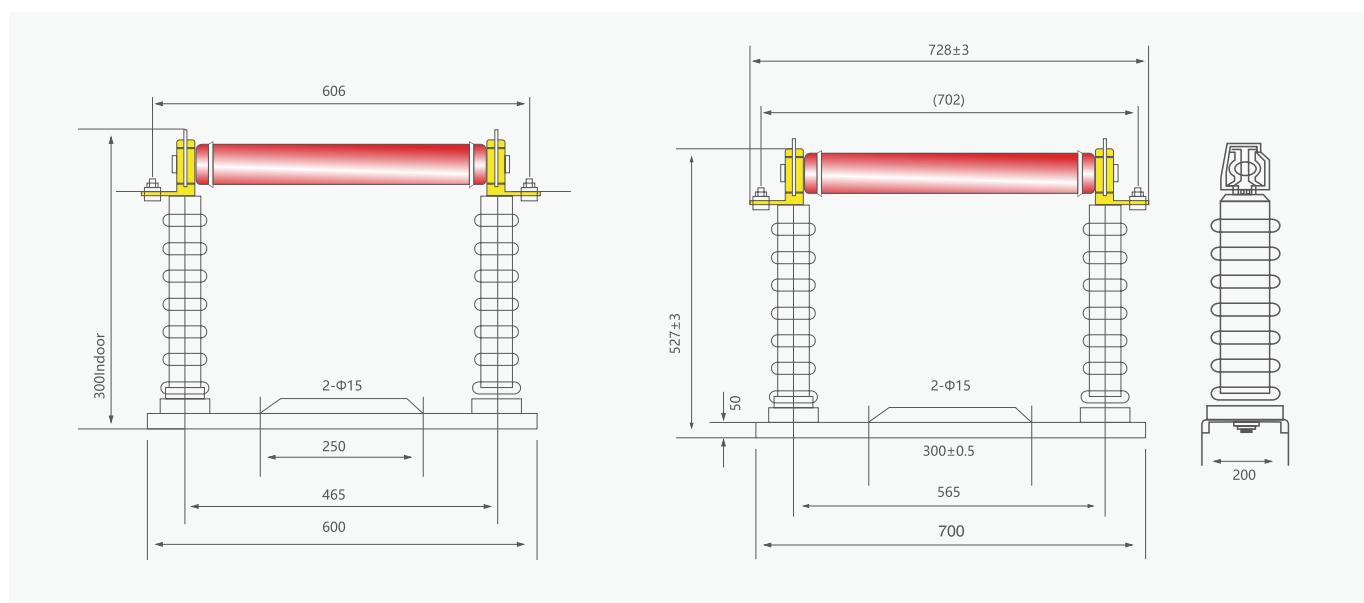
Chat3/a link XRNT \square -40.5Kv



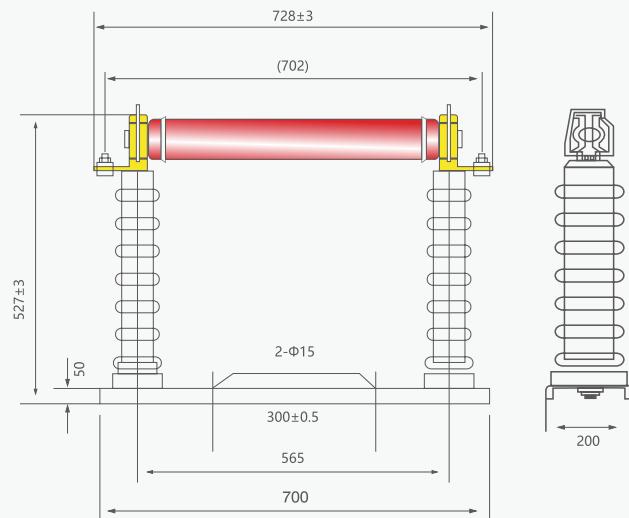
Chat4/b link(12Kv)



Chat5/Inserting type fuse
XRNT \square -24Kv



Chat6/Inserting type fuse
XRNT \square -40.5Kv



MV Fuse

XRN M1 Current-limiting fuses for motor protection

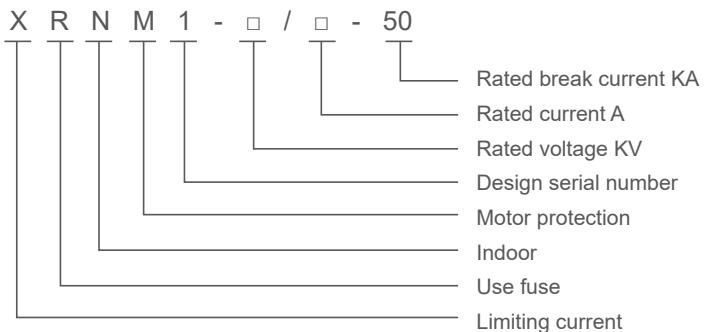
- The product can be used in indoor AC system of 50Hz and rated voltage 3.6kV and 7.2KV 12Kv. When used togetherwith other protection facilites(such as switches and vacuum contactors), it works to protect high-volttagemotor and other electric facilities from overloading and ciscrit break.

General



XRN M1 Current-limiting fuses for motor protection

Type designation



Technical data

Type	Rated voltage(Kv)	Rated break current KA	Rated current of the fuse (A)	Rated current of the fuse link (A)	Major dimensions			
					A	B	C	D
XRN M1-3.6	3.6	50	125	50,63,100,125	337 (390)	254 (312)	305 (340)	51
			200	125,160,200				76
			400	250,315,355,400				
XRN M1-7.2	7.2 12		160	25,31.5,40,50,63,80,100,125,160	486 (500)	403 (461)	454 (150)	76
			315	200,224,250,315				

XRN1 Current-limiting fuses for motor protection

Features

1. In required working conditions, the fuse can break any fault current between the minimum break current 1.6-3 and therated break current.
2. See Chart 3 for time-current property. The section above the minimum break current is by dotted line.
3. See Chart 4 for current limit property.
4. See Chart 5 for I^2t property.

Overall and mounting dimensions(mm)

Chart1 Busbar fuse Installation Dimensions

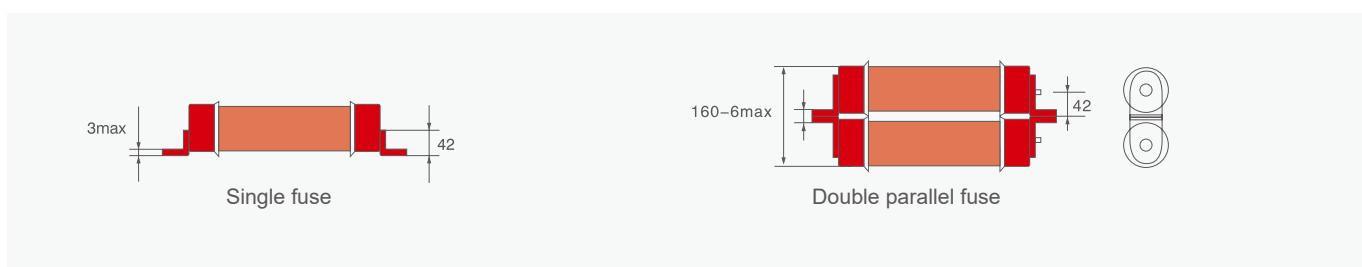
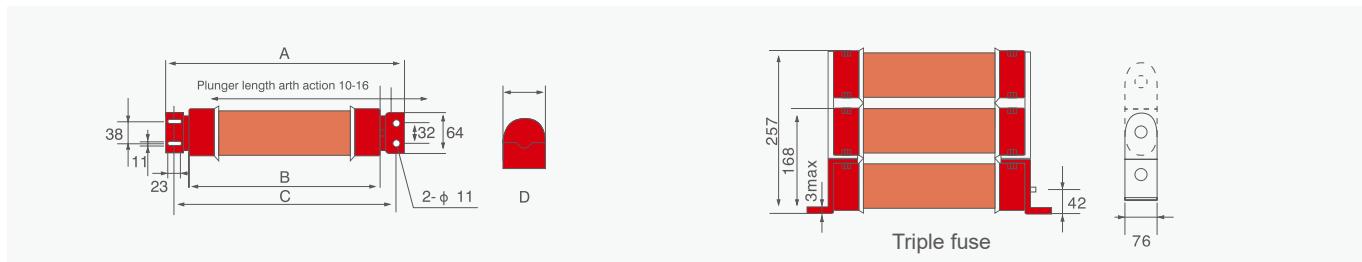
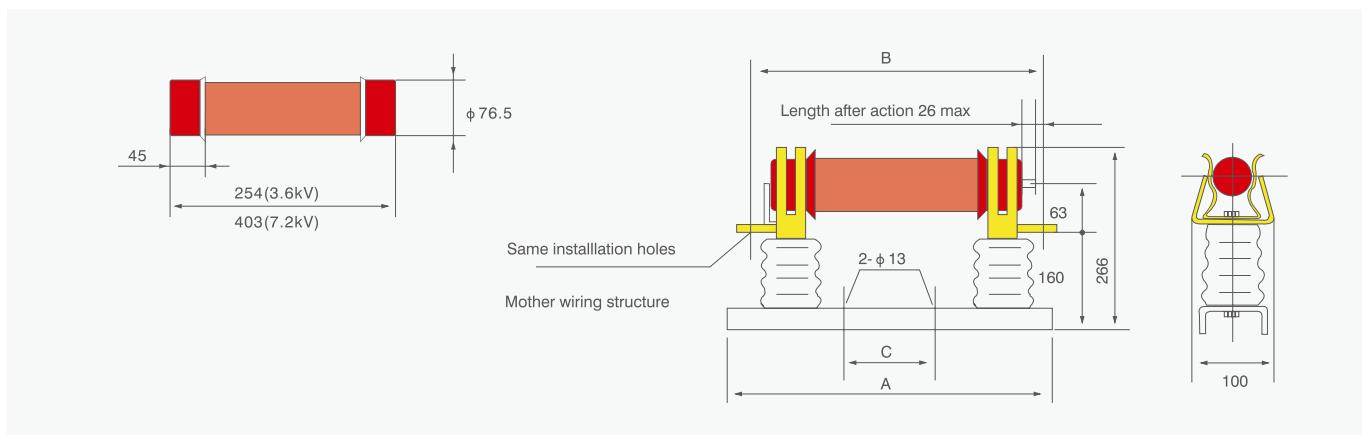


Chart2 Inserting fuse Installation Dimensions



MV Fuse

RN1 Indoor Current Limiting Fuse

- The product is used in overload or short-circuit protection for electric transformer. The current limiting means that the fuse will cut off the circuit before the short-circuit current reaches the peak value.

General



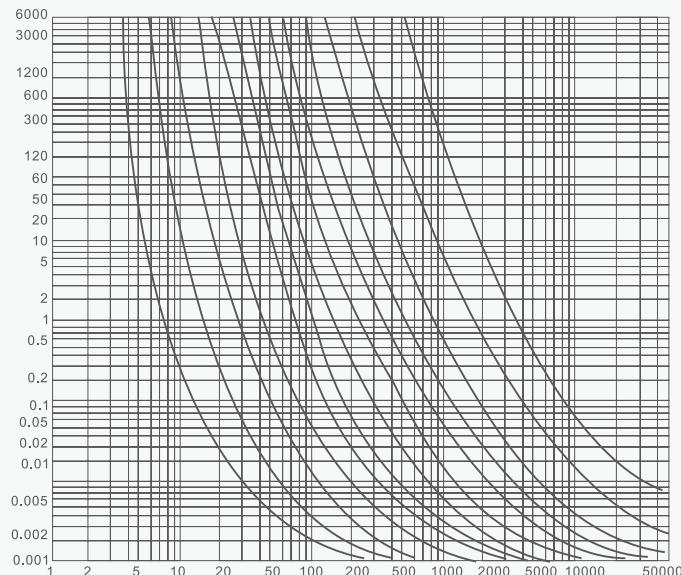
MV Fuse

RN1 Indoor Current Limiting Fuse

Features

Current which passes the fuse when being 1.3 times of its specified electric current. Do not fuse for an hour; when the current through the fuse is 2 times of its specified electric current, fusing in an hour; Refer to its fusing feature curve in chart 1 when select the fuse.

Figure 1 RN1/RN3 "An-second" characteristic curve



Technical data

Type	3					6					10					35				
Rated current (A)	20	100	200	300	400	50	50	75	100	200	20	50	75	100	200	7.5	10	20	30	40
Max breaking current KV effective value	40					1.3					1.3					1.3				
The minimum breaking current Express with specified electric current multiple	nuprovide					1.3					nuprovide					1.3				
Three-phase maximum cut-off capacity(MVA)	8	8.9	10.8	15.7	15.7	8.5	9.6	13.6	13.6	17	10	11.5	14.5	21	21	10	20	27	27	27

Structure of fuse link

The fuse pipe is the main part of fuse, it is made by installing the fuse wire in the porcelain pipe, filling the quartz sand in the porcelain pipe and sealing to ends of pipe. For the fuse pipe with rated current below 7.5A and 35V rated voltage, its fuse wire is rolled on the special porcelain core, referring to chart 2.a. for the fuse pipe with rated current above 7.5A, its fuse wire is hang in the porcelain pipe, referring to the chart.

MV Fuse

RN1 Indoor Current Limiting Fuse

Overall and mounting dimensions(mm)

Chart 2-the section of style fuse pipe

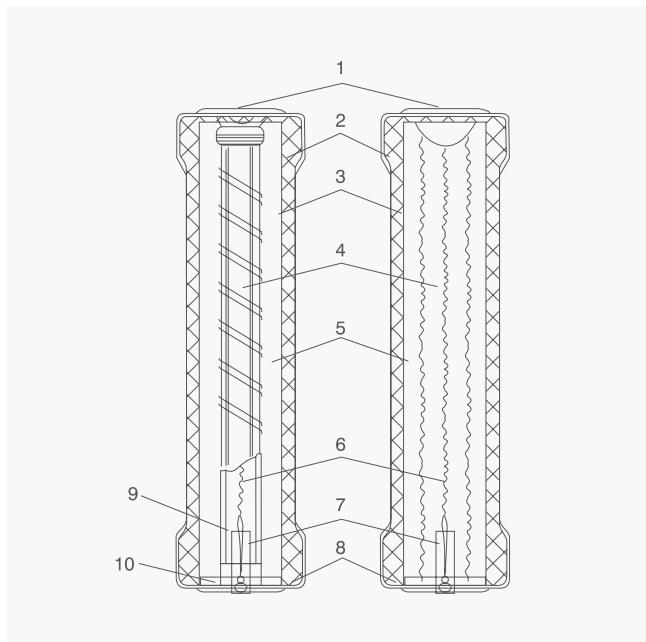
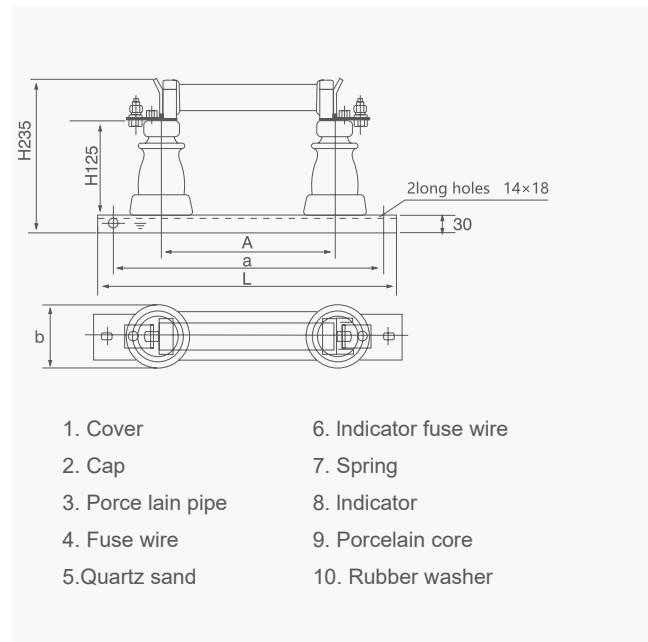


Chart 3-the section of style fuse pipe



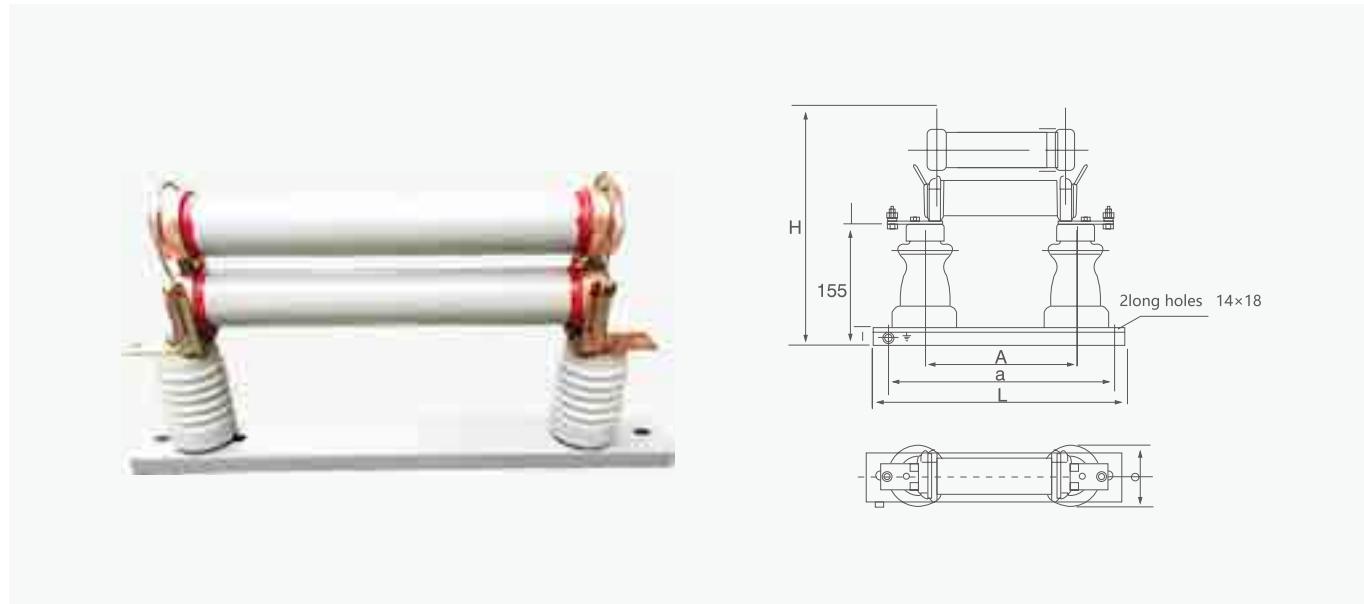
Technical data

Product type	Product code number	Diagram number	Rated volta	Fuse current A	Main size					
					A	a	L	H1	H	b
RN1-6/2	RN3	Figure 3	6	2	310	500	550			
RN1-6/3	RN3			3						
RN1-6/5	RN3			5						
RN1-6/7.5	RN3			7.5						
RN1-6/10	RN3			10						
RN1-6/15	RN3			15						
RN1-6/20	RN3			20						
RN1-10/2	RN3	Figure 3	10	2	410	600	650		125	235
RN1-10/3	RN3			3						
RN1-10/5	RN3			5						
RN1-10/7.5	RN3			7.5						
RN1-10/10	RN3			10						
RN1-10/15	RN3			15						
RN1-10/20	RN3			20						
RN1-10/25	RN3			25						
RN1-10/30	RN3			30						

MV Fuse

RN1 Indoor Current Limiting Fuse

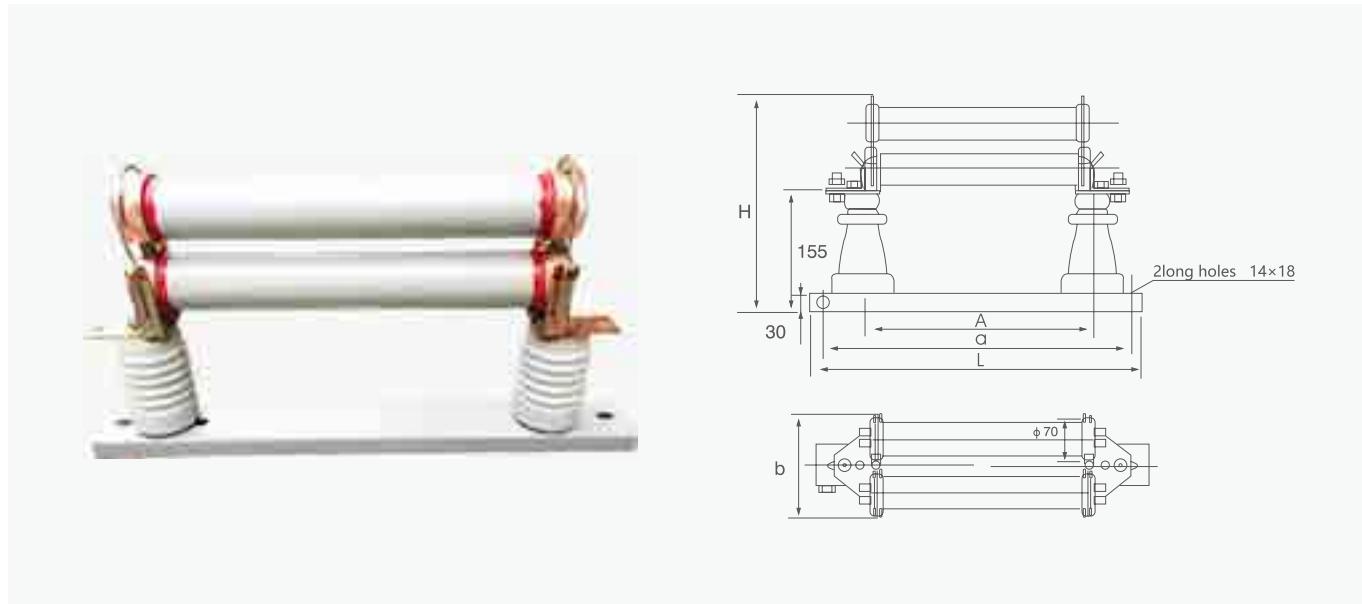
Figure 6



Product type	Product code number	Diagram number	Rated volta	Fuse current A	Main size				
					A	a	L	H	b
RN1-3/150	RN3	Figure 6	3	150	270	400	450	350	108
RN1-3/200	RN3			200					
RN1-6/100	RN3	Figure 6	6	100	360	500	550	350	108
RN1-6/150	RN3			150					
RN1-6/200	RN3	Figure 6	10	200	460	600	650	350	108
RN1-10/75	RN3			75					
RN1-10/100	RN3			100					

RN1 Indoor Current Limiting Fuse

Figure 6



Product type	Product code number	Diagram number	Rated volta	Fuse current A	Main size			
					A	a	L	b
RN1-10/80	RN3	Figure 7	10	80	460	600	650	108
RN1-10/100	RN3		10	100				
RN1-10/150	RN3		10	150				
RN1-10/200	RN3		10	200				

MV Fuse

RN2 Indoor Current Limiting Fuse

- ◆ The product is used in overload or short-circuit protection for instrument transformer. At the time of holdingup by restrain circuit current way to get minimum from carry on instantaneous to turn on and break,it should be witin therange of 0.6-1.8A to fuse the electric current in one minute.

General



RN2 Indoor Current Limiting Fuse

Technical data

Product type	RN2-3,6,10			RN2-15,20		RN2-35
Rated voltage	3	6	10	15	20	35
KV Fuse current A		0.5		0.5		0.5
Capacity of largest break of three-phase MVA	500		1000		1000	
Max break current KA effective value KA	500	85	50	40	30	17
Overvoltage multiple	Do not exceed voltage of 2.5 times of rating					
Resistance of the fuse pipe (Ω)	93±7		200±10		315±14	
Weight Kg	5.6		12.2		15.6	
Fuse weight Kg	0.9		1.6		2.5	

Overall and mounting dimensions(mm)

Figure 8 External Dimensions of RN2-3, 6, 10/0.5 Models

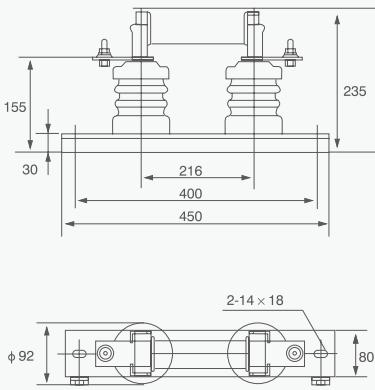


Figure 8 External Dimensions of RN2-15, 20/0.5 Models

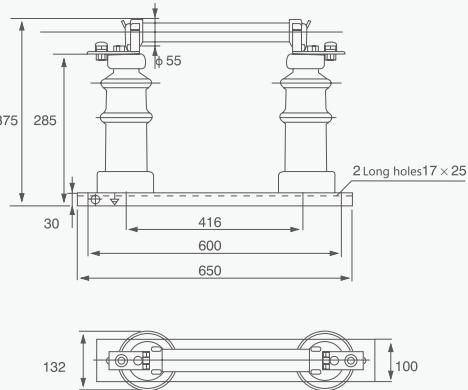
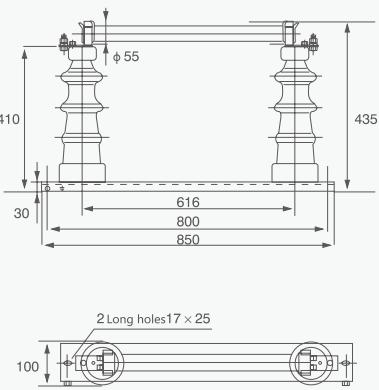


Figure 8 External Dimensions of RN2-35/0.5 Model



MV Fuse

PRW□ Drop-out Fuse

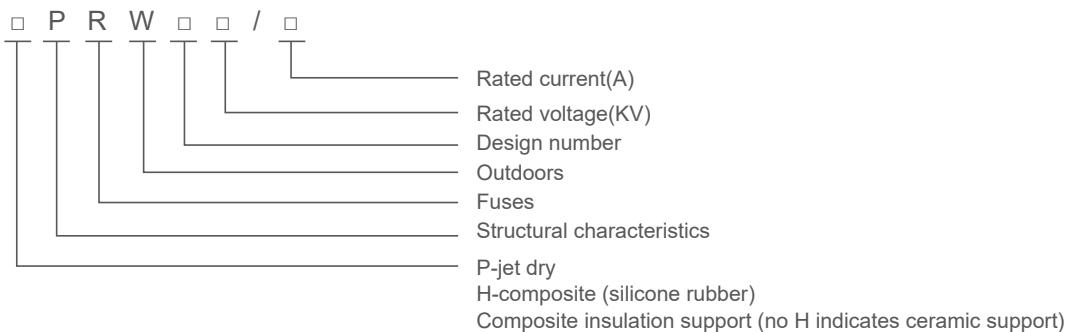
- Outdoor drop type fuses are suitable for 35kV and below voltage and frequency 50Hz power systems, used for overload and short circuit protection of transmission lines and power transformers, and for breaking and closing rated load current.
- The drop type fuse consists of an insulation bracket and a fuse tube, with static contacts installed at both ends of the insulation bracket and dynamic contacts installed at both ends of the fuse tube. The fuse tube consists of an inner arc extinguishing tube and an outer phenolic paper tube or epoxy glass cloth tube.

General



PRW□ Drop-out Fuse

Type designation



Operating conditions

1. Suitable for environments with an upper limit of 40 °C and a lower limit of -30 °C.
2. Altitude not exceeding 1000m, wind speed not exceeding 35m/s
3. Fuses are not suitable for the following locations
 - 3.1. Places with fuel or explosion hazards.
 - 3.2. Places with severe vibration or impact.
 - 3.3. Areas with abnormal electrochemical gas effects and severe air pollution and smoke

MV Fuse

PRW□ Drop-out Fuse

Technical data parameter of porcelain housed fuse

Type	Rated voltage (kV)	Rated current (A)	Breaking current (A)	Impulse voltage (kV)	Power frequency withstand voltage (kV)	Creepage distance (mm)	Weight (kg)	Dimension (cm)
PRW1-11	11	100	10000	110	40	250	7.2	38.5×34.5×10.5
	11	200	12000	110	40	250	7.4	38.5×34.5×10.5
PRW1-15	15	100	10000	125	45	350	10	50×36×11
	15	200	12000	125	45	350	10	50×36×11
PRW1-24	24	100	10000	150	65	540	12	51×35×14
	24	200	12000	150	65	540	12	51×35×14
PRW1-27	27	100	10000	170	70	700	15	51×38×14.5
	27	200	12000	170	70	700	15	51×38×14.5
PRW1-33	33	100	10000	170	80	700	15	51×38×14.5
	33	200	12000	170	80	700	15	51×38×14.5
PRW1-36	36	100	10000	170	80	720	16	66×38×14.5
	36	200	12000	170	80	720	16	66×38×14.5
PRW2-11	11	100	10000	110	40	250	7.2	38.5×34.5×10.5
	11	200	12000	110	40	250	7.4	38.5×34.5×10.5
PRW2-15	15	100	10000	125	45	350	10	50×36×11
	15	200	12000	125	45	350	10	50×36×11
PRW2-24	24	100	10000	150	65	540	12	51×35×14
	24	200	12000	150	65	540	12	51×35×14
PRW2-27	27	100	10000	170	70	700	15	51×38×14.5
	27	200	12000	170	70	700	15	51×38×14.5
PRW2-33	33	100	10000	170	80	700	15	51×38×14.5
	33	200	12000	170	80	700	15	51×38×14.5
PRW2-36	36	100	10000	170	80	720	16	66×38×14.5
	36	200	12000	170	80	720	16	66×38×14.5

MV Fuse

PRW□ Drop-out Fuse

Technical data parameter of porcelain housed fuse

Type	Rated voltage (kV)	Rated current (A)	Breaking current (A)	Impulse voltage (kV)	Power frequency withstand voltage (kV)	Creepage distance (mm)	Weight (kg)	Dimension (cm)
PRW10-11	11	100	10000	110	40	250	7.4	36×34.5×11
	11	200	12000	110	40	250	7.4	36×34.5×11
PRW10-15	15	100	10000	125	45	350	10.0	48×34.5×11
	15	200	12000	125	45	350	10.5	48×34.5×11
PRW10-24	24	100	10000	150	65	540	12.0	49×38×14.5
	24	200	12000	150	65	540	12.5	49×38×14.5
PRW10-27	27	100	10000	170	70	700	15.0	51×38×14.5
	27	200	12000	170	70	700	15.0	51×38×14.5
PRW10-33	33	100	10000	170	70	700	15.0	58×38×14.5
	33	200	12000	170	70	700	15.5	58×38×14.5
PRW10-36	36	100	10000	170	80	720	16.0	65×38×14.5
	36	200	12000	170	80	720	16.5	65×38×14.5
HPRW10-11	11	100	10000	110	40	250	7.4	36×34.5×11
	11	200	12000	110	40	250	7.4	36×34.5×11
HPRW10-15	15	100	10000	125	45	350	10.0	48×34.5×11
	15	200	12000	125	45	350	10.5	48×34.5×11
HPRW10-24	24	100	10000	150	65	540	12.0	49×38×14.5
	24	200	12000	150	65	540	12.5	49×38×14.5
HPRW10-27	27	100	10000	170	70	700	15.0	51×38×14.5
	27	200	12000	170	70	700	15.0	51×38×14.5
HPRW10-33	33	100	10000	170	70	700	15.0	58×38×14.5
	33	200	12000	170	70	700	15.5	58×38×14.5
HPRW10-36	36	100	10000	170	80	720	16.0	65×38×14.5
	36	200	12000	170	80	720	16.5	65×38×14.5

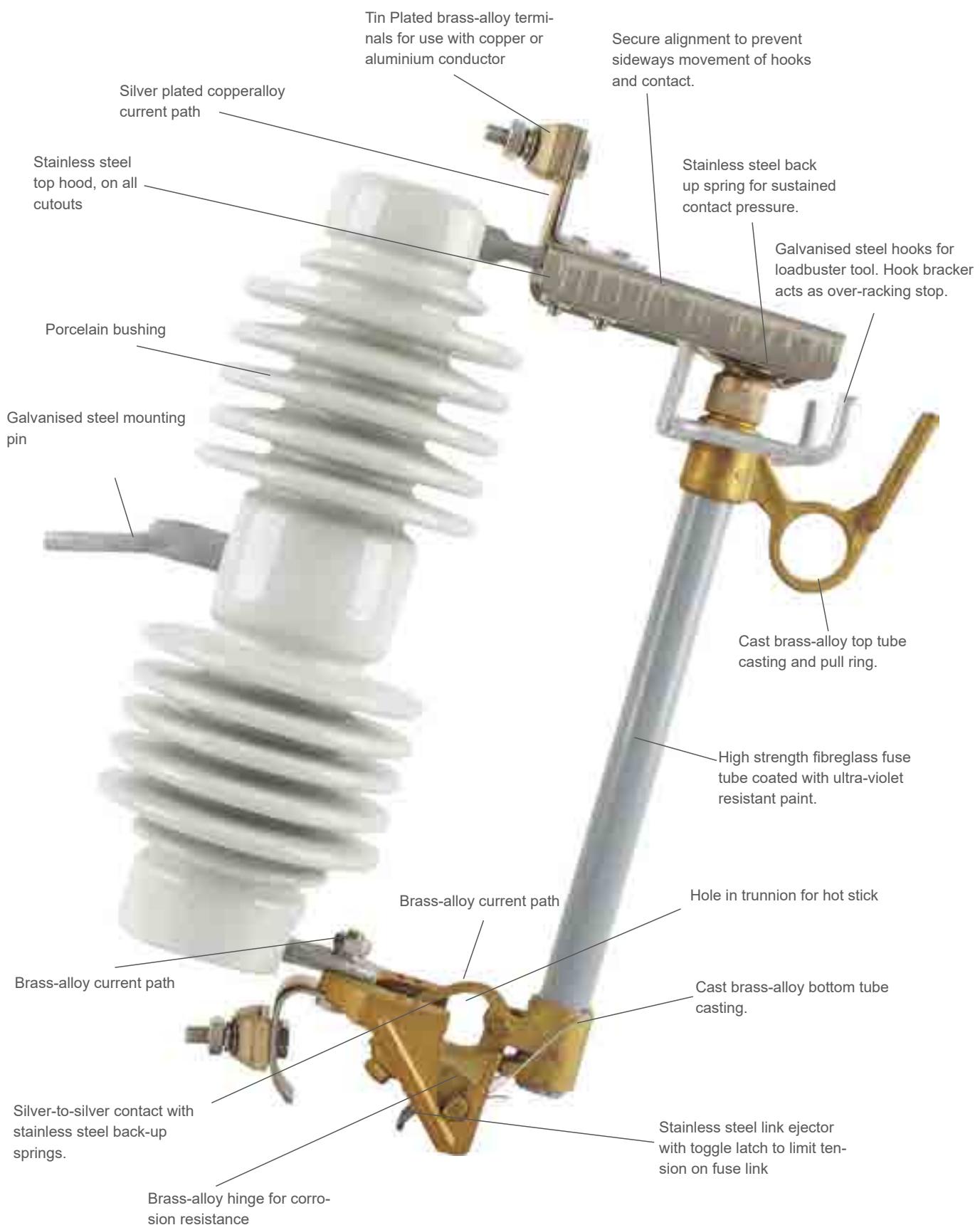
MV Fuse

PRW□ Drop-out Fuse

Technical data parameter of porcelain housed fuse

Type	Rated voltage (kV)	Rated current (A)	Breaking current (A)	Impulse voltage (kV)	Power frequency withstand voltage (kV)	Creepage distance (mm)	Weight (kg)	Dimension (cm)
HPRW1-11	11	100	10000	110	40	250	6.5	38.5×34.5×10.5
	11	200	12000	110	40	250	6.8	38.5×34.5×10.5
HPRW1-15	15	100	10000	150	45	390	7.2	50×36×10.5
	15	200	12000	150	45	390	7.4	50×36×10.5
HPRW1-24	24	100	10000	150	65	560	8.0	49×36×14
	24	200	12000	150	65	560	8.5	49×36×14
HPRW1-27	27	100	10000	170	70	740	9.0	51×36×14
	27	200	12000	170	70	740	9.5	51×36×14
HPRW1-33	33	100	10000	170	80	740	10.0	57×36×14
	33	200	12000	170	80	740	10.5	57×36×14
HPRW1-36	36	100	10000	180	80	820	12.0	66×36×14
	36	200	12000	180	80	820	12.5	66×36×14
HPRW2-11	11	100	10000	110	40	250	6.5	38.5×34.5×10.5
	11	200	12000	110	40	250	6.8	38.5×34.5×10.5
HPRW2-15	15	100	10000	150	45	390	7.2	50×36×10.5
	15	200	12000	150	45	390	7.4	50×36×10.5
HPRW2-24	24	100	10000	150	65	560	8.0	49×36×14
	24	200	12000	150	65	560	8.5	49×36×14
HPRW2-27	27	100	10000	170	70	740	9.0	51×36×14
	27	200	12000	170	70	740	9.5	51×36×14
HPRW2-33	33	100	10000	170	80	740	10.0	57×36×14
	33	200	12000	170	80	740	10.5	57×36×14
HPRW2-36	36	100	10000	180	80	820	12.0	66×36×14
	36	200	12000	180	80	820	12.5	66×36×14

PRW□ Drop-out Fuse



MV Fuse

PRW□ Drop-out Fuse

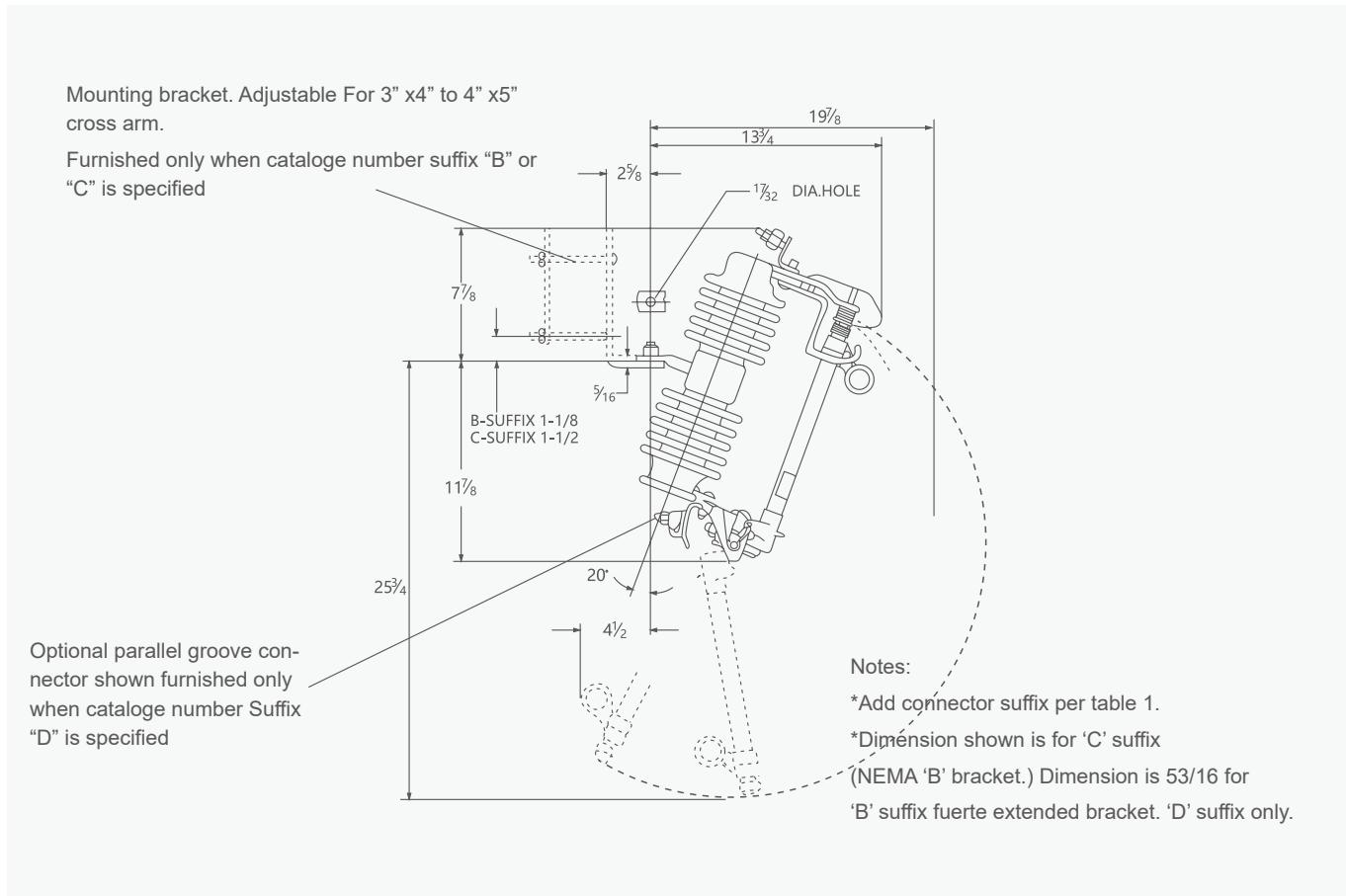


Mechanical assist

Fuse holder is available with a torsional spring on trunnion to aid drop out operation in corrosive environments.

Large nut to fasten fuselink without breaking strands

Overall and mounting dimensions(mm)



MV Fuse Fuse Link

- “KB,KU,Ks” type fuses belong to “K” and “T” type fuse. It has general type, universal type and screw type available according to IEC282 standard. The product is the drop-off type fuse of 11-36KV grade.

General



MV Fuse

Fuse Link

Technical data

Rated Current (A)	Dimension(mm)					Quantity/ GAOCI
	A	B	C	D	F	
1(to)25	12.5±0.2	19.0±0.2	Note 1	2.0	6.5	500
30(to)40	12.5±0.2	19.0±0.2	Note 1	3.0	8.0	500
50(to)100	19.0±0.3	Not applicable	Note 1	5.0	10.0	250
140(to)200	19.0±0.3	Not applicable	Note 1	7.0	12.0	150

Overall and mounting dimensions(mm)

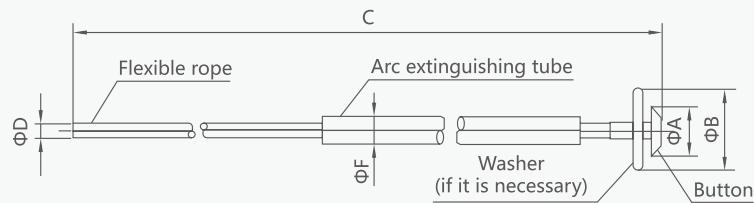
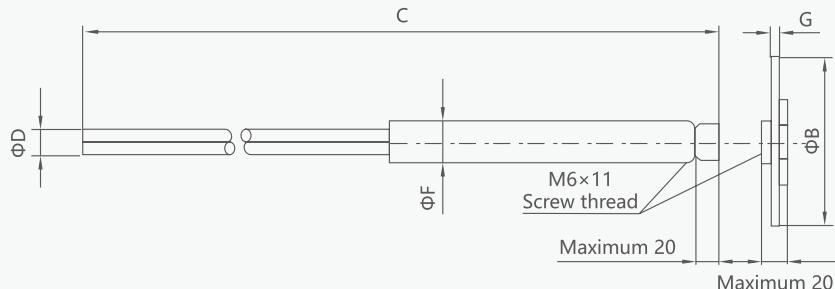


Fig. B. Ta button type



Surge Arrester



CNC
ELECTRIC

Surge Arrester

Zinc Oxide Arrester

- The zinc oxide arrester is the most advanced over-voltage protector in the world; Due to make the resistor disc of core component mainly adopt zinc oxide arrester. Compared with the conventional silicon carbide arrester, this prescription of the product improves greatly the volt-Ampere characteristics of the resistor disc and increased through-current capability at over-voltage so as to bring a radical changes for the characteristics of the arresters.
- Under the circumstance of normal operating voltage, the current through the arrester is just on microampere degree. When suffered from over-voltage, the arrester's excellent nonlinear characteristics will make the current through the arrester increase to several thousand amperes, while the arrester will be under the circulating state and release over-voltage energy so as to protecting the power transmission equipments against the damage caused by the over-voltage.

General



Surge Arrester

Zinc Oxide Arrester

Operating conditions

1. The ambient air temperatures is no higher than +40°C,no lower than -40°C;
2. The altitude above sea level dose not exceed 1000-2000m(the plateau ares should be indicated when ordering);
3. AC system frequency is 50Hz or 60Hz;
4. The power frequency voltage applied to the arrester for a long time does not exceed the continuous working voltage of the arrester;
5. Maximum wind speed does not exceed 35m/s;
6. The earthquake intensity does not exceed 7 degrees;
7. The filthy area should be given clear indication.

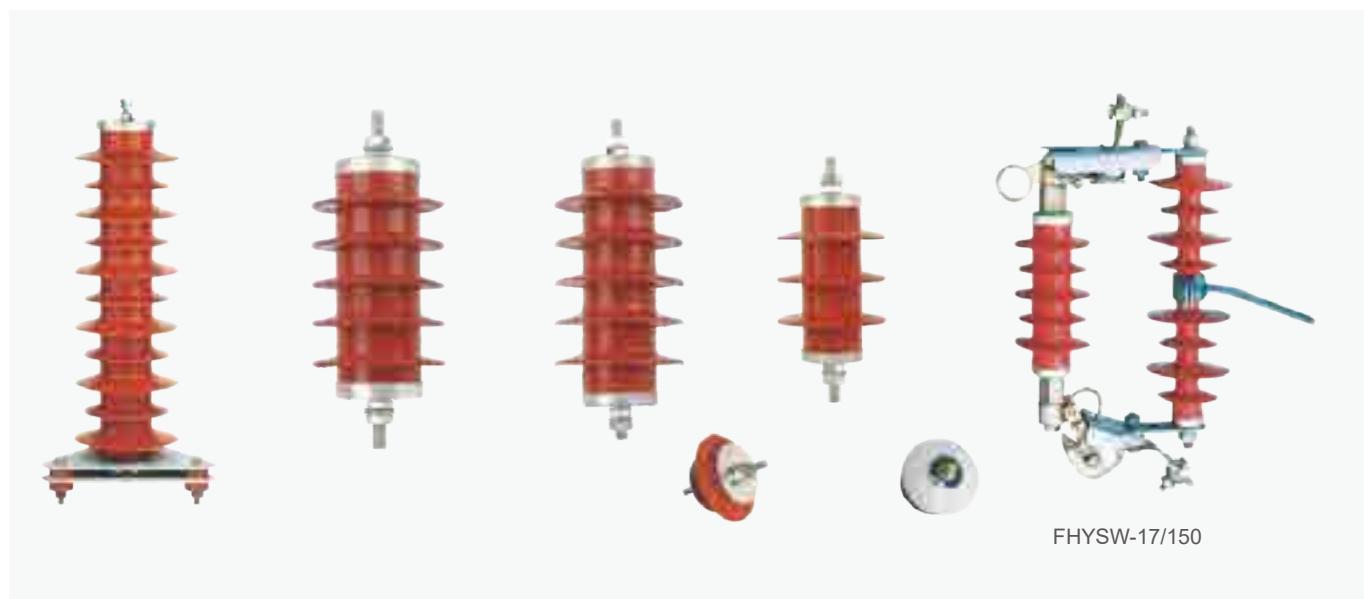
Features

The zinc oxide arrester is applied to protect the electrical equipment in AC power system against the damage resulted from atmospheres over-voltage and operational over-voltage.

Technical performance

The technical performance of the product confirms to GB11032-2000, IEC60099-4,IEEE.C62.11 standard technical requirements.

HYWS1 serise arrester



FHYSW-17/150

Surge Arrester

Zinc Oxide Arrester

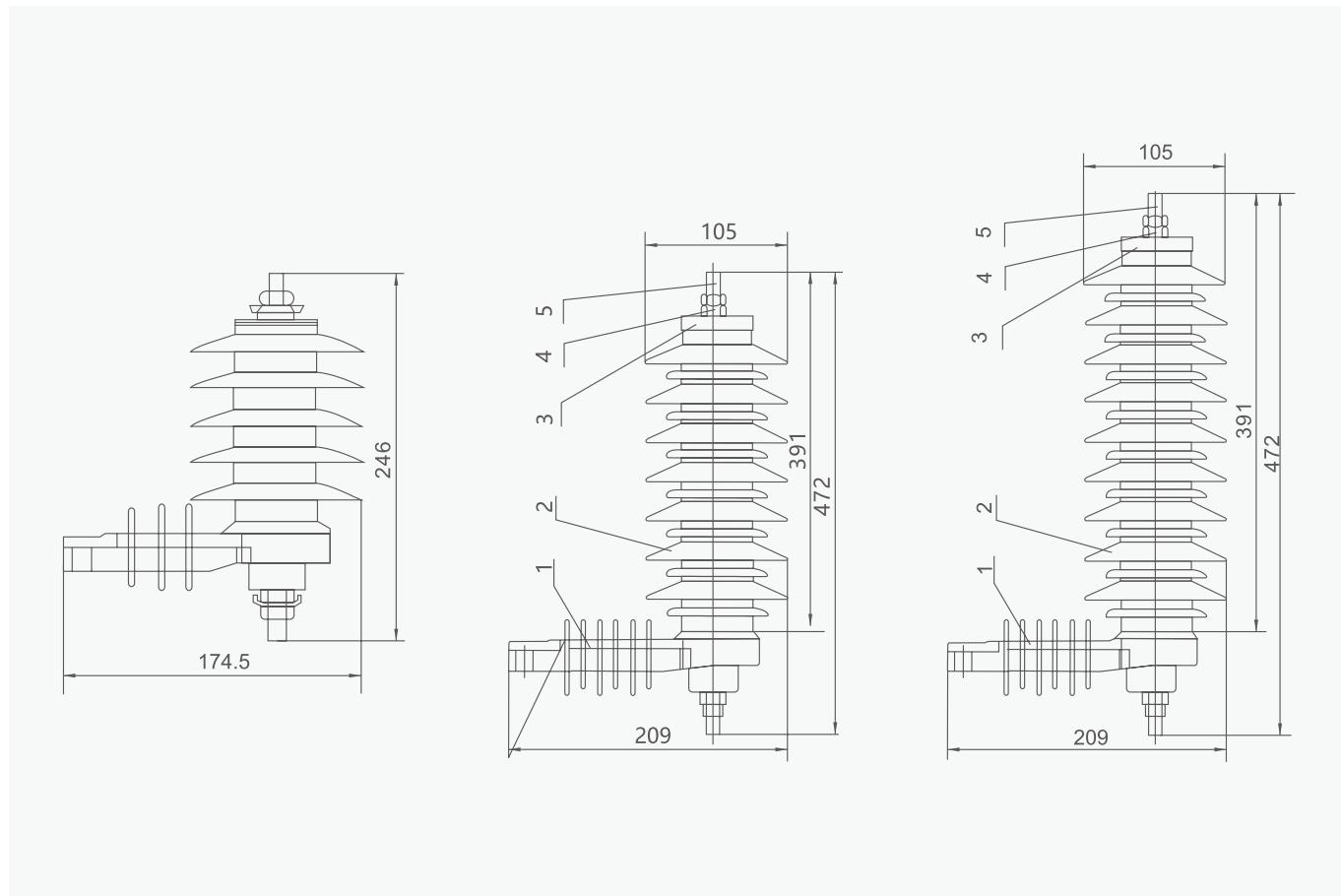
Technical data

Type	System Rated voltage KV(rms)	Arrester Rated voltage KV(rms)	Continuous Rated voltage KV(rms)	DC1mA voltage (kv)	Lightning Impulse residual voltage (kv)	Steep wave Impulse residual voltage(kv)	2ms square wave Impulse current withstand(A)
HYWS -3.8/17	3	3.8	2.4	7.5	17.0	19.6	100
HYWS -7.6/30	6	7.6	4.0	15.0	30.0	34.5	100
HYWS -12.7/50	10	12.7	6.6	26.0	50.0	57.5	150
HYWS17/50	10	17	13.6	26.5	50.0	57.5	150
HYWZ-7.6/27	6	7.6	4.0	14.5	27.0	31.0	200
HYWZ-12.7/45	10	12.7	6.6	24.0	45.0	51.8	200
HYWZ-17/45	10	17	12.7	24.0	45.0	51.8	200
HYWZ-42/134	35	52	40.8	78.0	134.0	154.0	400
HY2.5WD-7.6/19	605	7.6	4.8	11.5	19.0	21.9	200, 400
HY2.5WD-12.7/31	10.5	12.7	6.6	19.0	31.0	35.7	200, 400
HY2.5WD-16.7/40	13.8	16.7	9.0	25.0	40.0	46.0	400
HY2.5WD-19/45	15.7	19	10.0	28.5	45.0	51.8	400
HY5WR-7.6/27	6	7.6	4.8	13.8	27.0	20.8	400
HY5WR-12.7/45	10	12.7	6.6	23.0	45.0	35.0	400
HY5WR-42/134	35	52	23.4	73.0	134.0	105.0	400

Surge Arrester

Zinc Oxide Arrester

HY5W, HY10W serise polymer Type lightning arrester



Surge Arrester

Zinc Oxide Arrester

Technical data

5KA Gapless Arrester Electrical Character

Type	Rated voltage (kV)	MCOV (kV)	Residual voltage(kV)			2000μs square wave impulses current withstand	4/10μs high current impulses
			Steep current impulse	Switching current impulse	8/20μs Lighting current impulse		
HY5W-3	3	2.55	9.5	7.7	9	100	65
HY5W-6	6	5.1	19.0	15.4	18	100	65
HY5W-9	9	7.65	28.5	23.1	27	100	65
HY5W-12	12	10.2	38.0	30.8	36	100	65
HY5W-15	15	12.7	47.5	38.5	45	100	65
HY5W-18	18	15.3	57.0	46.2	54	100	65
HY5W-21	21	17.0	66.5	53.9	63	100	65
HY5W-24	24	19.2	76.5	61.6	72	100	65
HY5W-27	27	21.9	85.5	69.3	81	100	65
HY5W-30	30	24.4	95.0	76.5	90	100	65
HY5W-33	33	26.8	104.5	84.7	99	100	65
HY5W-36	36	29	114.0	91.4	108	100	65
HY5W-42	42	34.1	132.3	100.1	126	100	65

10KA Gapless Arrester Electrical Character

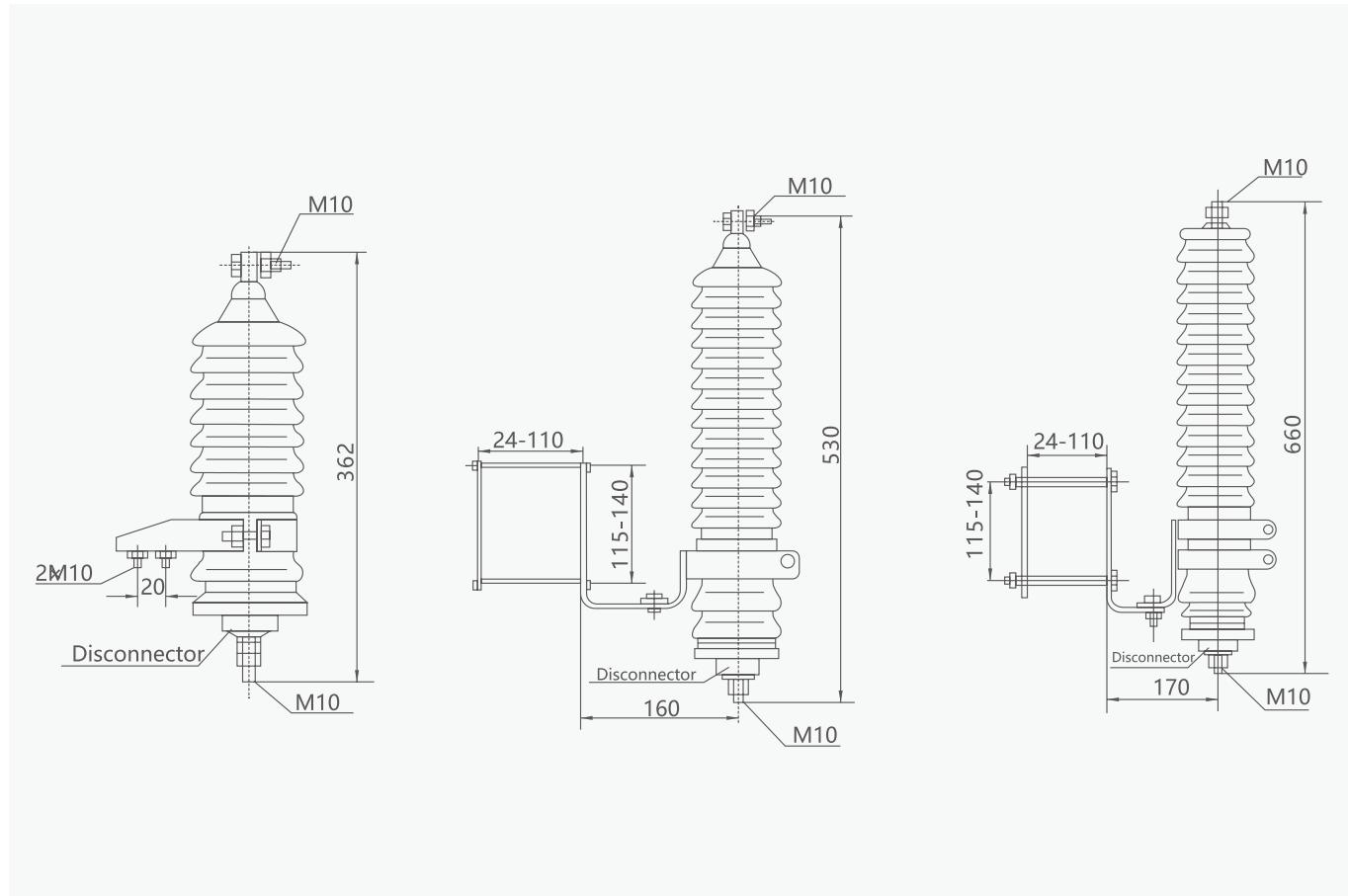
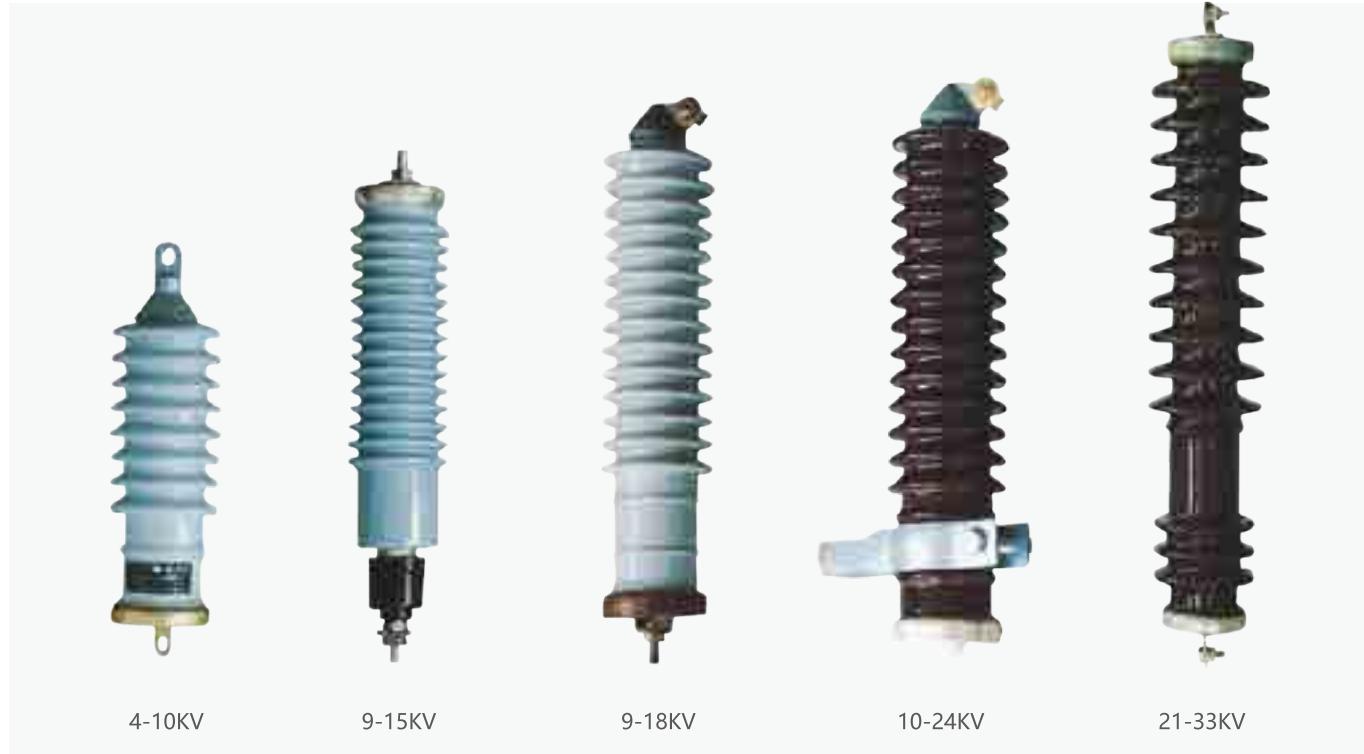
Type	Rated voltage (kV)	MCOV (kV)	Residual voltage(kV)			2000μs square wave impulses current withstand	4/10μs high current impulses
			Steep current impulse	Switching current impulse	8/20μs Lighting current impulse		
HY10W-3	3	2.55	9.5	7.7	9	1	100
HY10W-6	6	5.1	19.0	15.4	18	1	100
HY10W-9	9	7.65	28.5	23.1	27	1	100
HY10W-12	12	10.2	38.0	30.8	36	1	100
HY10W-15	15	12.7	47.5	38.5	45	1	100
HY10W-18	18	15.3	57.0	46.2	54	1	100
HY10W-21	21	17.0	66.5	53.9	63	1	100
HY10W-24	24	19.2	76.5	61.6	72	1	100
HY10W-27	27	21.9	85.5	69.3	81	1	100
HY10W-30	30	24.4	95.0	76.5	90	1	100
HY10W-33	33	26.8	104.5	84.7	99	1	100
HY10W-36	36	29	114.0	91.4	108	1	100
HY10W-42	42	34.1	133.0	100.1	126	1	100
HY10W-48	48	39	152.0	126.0	150	1	100
HY10W-54	54	43	171.0	139.0	162	1	100
HY10W-60	60	48	208.0	160.0	180	1	100
HY10W-66	66	52.8	230.0	172.0	198	1	100

Note: if is porcelain, without "H".

Surge Arrester

Zinc Oxide Arrester

HY5W,Y5C,Y10W,Y10C serise arrester



Surge Arrester

Zinc Oxide Arrester

Technical data

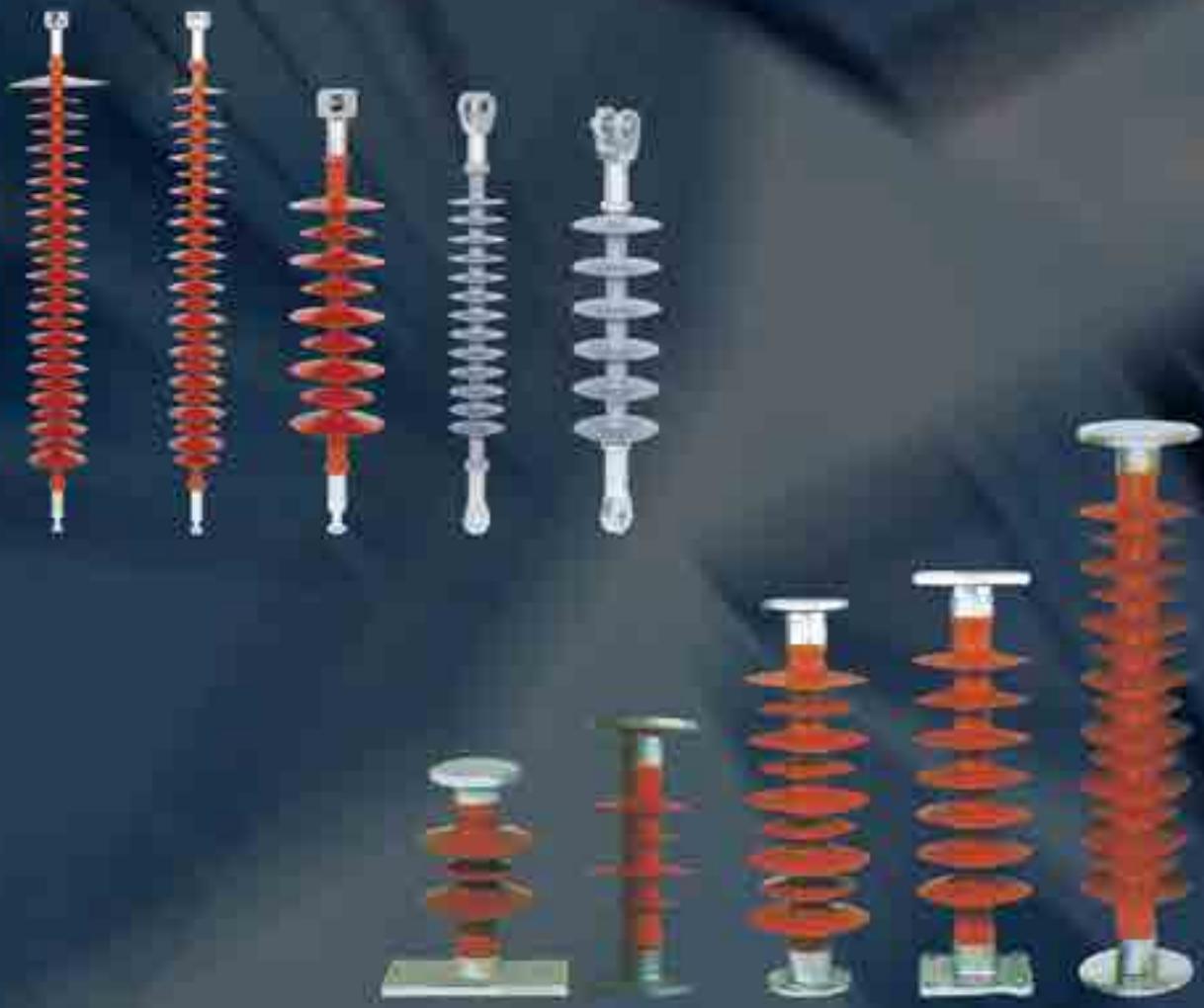
Type	System rated voltage (kv)	Arrester rated voltage (kv)	Continuous operation voltage (kv)	DC 1mA voltage (kv)	Lightning impulse residual voltage (kv)	Steep wave impulse residual voltage (kv)	2ms square wave Impulse current withstand(A)	Service scope
Y1.5W-0.28/1.3	0.28	0.22	0.24	0.6	1.3	-	75	Low-voltage
Y1.5W-0.5/2.6	0.5	0.38	0.42	1.2	2.6	-	75	
Y5WS-3.8/1.7	3.8	3	2.0	7.5	17.0	19.6	100	S Power of distribution
Y5WS-7.6/30	7.6	6	4.0	15	30	34.5	100	
Y5WS-10/30	10	6	8.0	15	30	34.5	100	
Y5WS-12.4/50	12.7	10	6.6	25	50	57.5	100	
Y5WS-17/50	17	10	13.6	25	50	57.5	100	
Y5WZ-3.8/13.5	3.8	3	2.0	7.2	13.5	14.5	200	
Y5WZ-7.6/27	7.6	6	4.0	14.4	27	31.0	200	Z Transformer substation
Y5WZ-10/27	10	6	8.0	14.4	27	31.0	200	
Y5WZ-12.7/45	12.7	10	6.6	24	45	51.8	200	
Y5WZ-17/45	17	10	13.6	24	45	51.8	200	
Y5WZ-42/134	42	35	23.4	73	134	154	400	
Y5WZ-51/134	51	35	40.8	73	134	154	400	
Y5WZ-100/260	100	110	78	145	260	291	400, 600	D Circumvolve motor
Y10WE-100/260	100	100	78	145	260	291	600, 800	
Y2.5WD-3.8/9.5	3.8	3	2.0	5.7	9.5	10.7	400	
Y2.5WD-7.6/19	7.6	6	4.0	11.2	19	21.9	400	
Y2.5WD-12.7/31	12.7	10	6.6	18.6	31	35.7	400	R Capacitor
Y5WR-3.8/13.5	3.8	3	2.0	7.2	13.5	14.8	400	
Y5WR-7.6/27	7.6	6	4.0	14.4	27	30.8	400	
Y5WR-10/27	10	6	8.0	14.4	27	31.0	400	
Y5WR-12.7/45	12.7	10	6.6	24	45	51	400	
Y5WR-17/45	17	10	13.6	24	45	51	400	
T5WR-51/134	51	35	40.5	73	134	154	400	
Y1.5W-2.4/6	2.4	3.2*	1.9	3.4	6	-	5	D Neuter point of motor
Y1.5W-4.8/12	4.8	6.3*	3.8	6.8	12	-	10	
Y1.5W-8/19	8	10.5	6.4	11.4	19	-	15.9	
Y1.5W-60/144	60	110	48	85	144	-	135	Neuter point of transfromer
Y1.5W-72/186	72	110	58	103	186	-	174	

Note:

Please add an "H" before the spec. in the above table of composite organic housing zinc oxide arrester.

* is the rated voltage of motor.

Insulator



CNC
ELECTRIC

Insulator

Polymer Insulators

- Polymer insulator shed made of silicon rubber for guarantee the outside insulation; high strength epoxy poles provide inside insulation for products and sustain machine load. These products use new technology, which press connect of mold, mandrel and metal terminal which improved the products, reliability, the characters as follows:
- Superior electrical function and strength soiling, small volume, light weight, excellent impulse resistance, shock resistance, and explosion resistance.

General



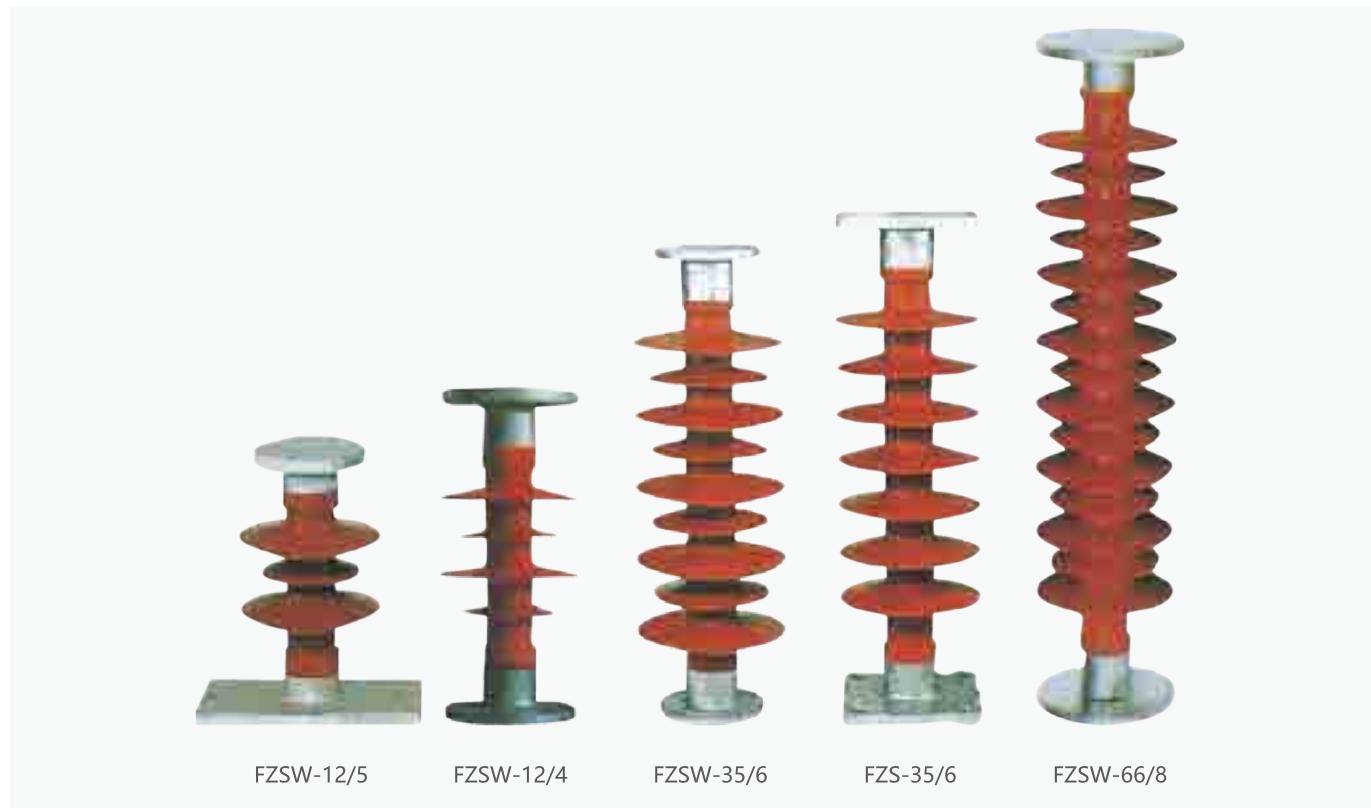
Surge Arrester

Polymer Insulators

Technical data

Type	Rated current (kv)	Rated mechanical load(kN)	Height (mm)	Insulating Li(mm)
FZSW-12/4	12	4	215±10	175
FZS-35/6	35	6	445±10	378
FZSW-35/6	35	6	450±10	360
FZSW-66/8	66	8	770±10	670
FZSW-110/10	110	10	1220±10	1085

Type	Min. creepage distance (mm)	Diameter of shed D.(mm)	Full wave lighting frequency wet withstand voltage (peak) KV	1min Power frequency wet withstand voltage (peak value)KV
FZSW-12/4	305	105/80	75	42
FZS-35/6	890	135	185	100
FZSW-35/6	946	140/115	185	100
FZSW-66/8	1825	170/135	325	165
FZSW-110/10	3160	185/160	490	230



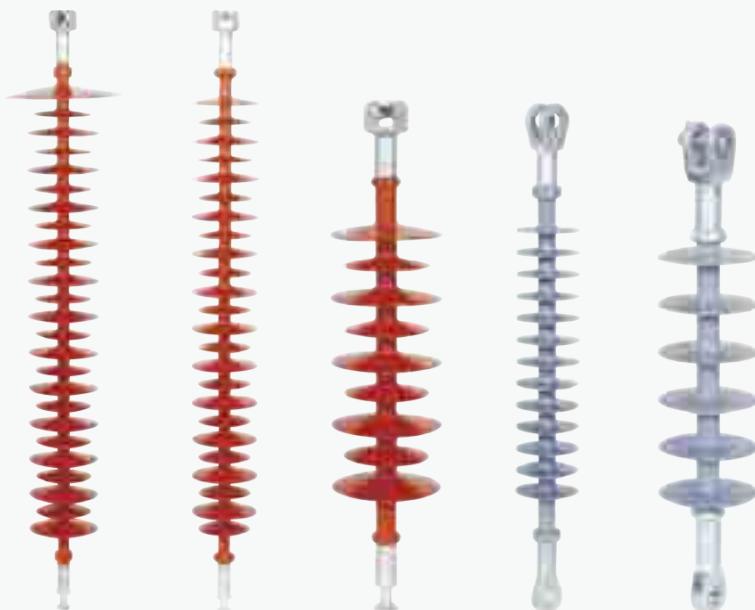
Surge Arrester

Polymer Insulators

Technical data

Type	Rated current (kv)	Rated mechanical load(kN)	Height (mm)	Insulating Li(mm)
FXBW2-12/70UC	12	70	350	180
FXB2-15/70UD	15	70	375	200
FXB2-24/70UD	24	70	430	290
FXB2-28/70UD	28	70	430	290
FXB2-33/70UD	33	70	550	360
FXB2-35/70UD	36	70	570	400
FXBO2-36/70	36	70	650	450

Type	Min. creepage distance (mm)	Diameter of shed D.(mm)	Full wave lightning frequency wet withstand voltage (peak) KV	1min Power frequency wet withstand voltage (peak value)KV
FXBW2-12/70UC	360	98/88	42	105
FXB2-15/70UD	470	98/88	42	105
FXB2-24/70UD	680	98	42	150
FXB2-28/70UD	680	98	95	230
FXB2-33/70UD	720	98	95	230
FXB2-35/70UD	1000	76	95	230
FXBO2-36/70	720	98	95	230



Surge Arrester

Polymer Insulators

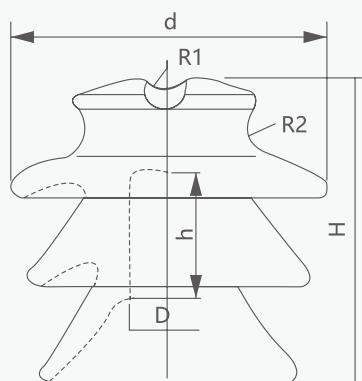


Fig 1

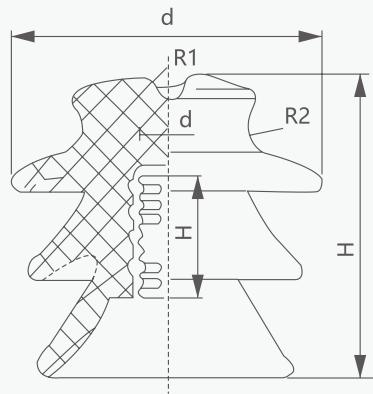


Fig 2

Main dimensions and standard parameter

Type	st-10/J	st-15/J	st-20/J	P-20-D
Cat.No	101034	101022	101023	101015
Fig.No	1	1	1	2
Main dimensions(mm)	H	130	150	185
	h	55	60	65
	D	135	150	175
	d	31	31	35
	R1	10	10	10
	R2	12.5	12.5	12.5
Nominal voltage (kV)	10	15	20	20
Creepage distance (mm)	240	270	340	340
Power-frequency puncture voltage (kV)	110	120	140	150
Electronical failing load (kN)	12	12	14.7	14.7
Flashover (min)	Power frequency	Dry(kV)	70	90
		Wet(kV)	42	65
		50% Critical fmpulse	100	130
Weight(kg)	1.5	2.7	3.4	3.8

Surge Arrester

Polymer Insulators

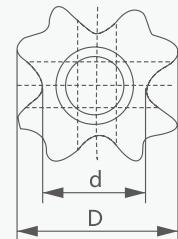
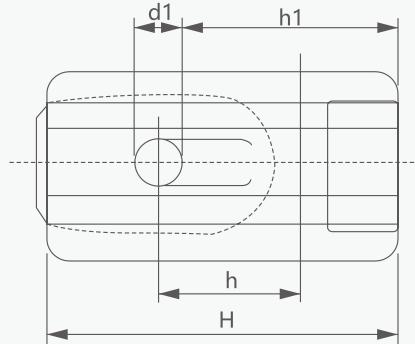
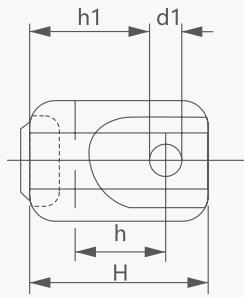
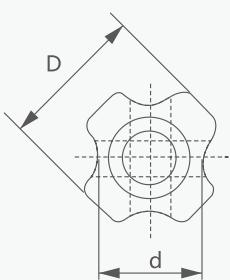


Fig 1

Fig 2

Main dimensions and standard parameter

Type	54-1	54-2	54-3	54-4	
Cat.No	012001	012001	012003	012001	
Fig.No	1	1	1	2	
	H	88	108	140	
Main dimensions(mm)	h	64	76	103	
	D	64	73	86	
	d	44	54	60	
	R1	16	22	25	
	R2	44	57	79	
	Mechanical Failing load (kg)	44	53	89	
Creepage distance (mm)		41	47	57	
Flashover (min)	Power frequency	Dry(kV)	25	30	
		Wet(kV)	12	15	
Weight(kg)		0.43	0.63	1.2	
				2	

Surge Arrester

Polymer Insulators

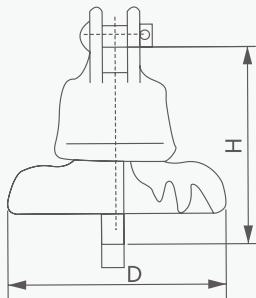


Fig 1

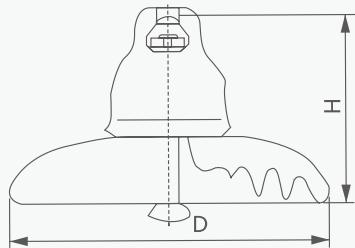


Fig 2

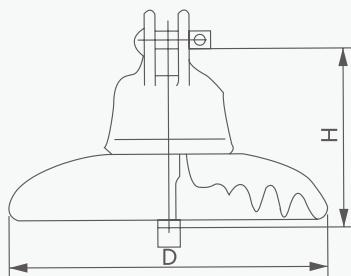


Fig 3

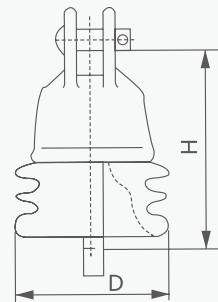


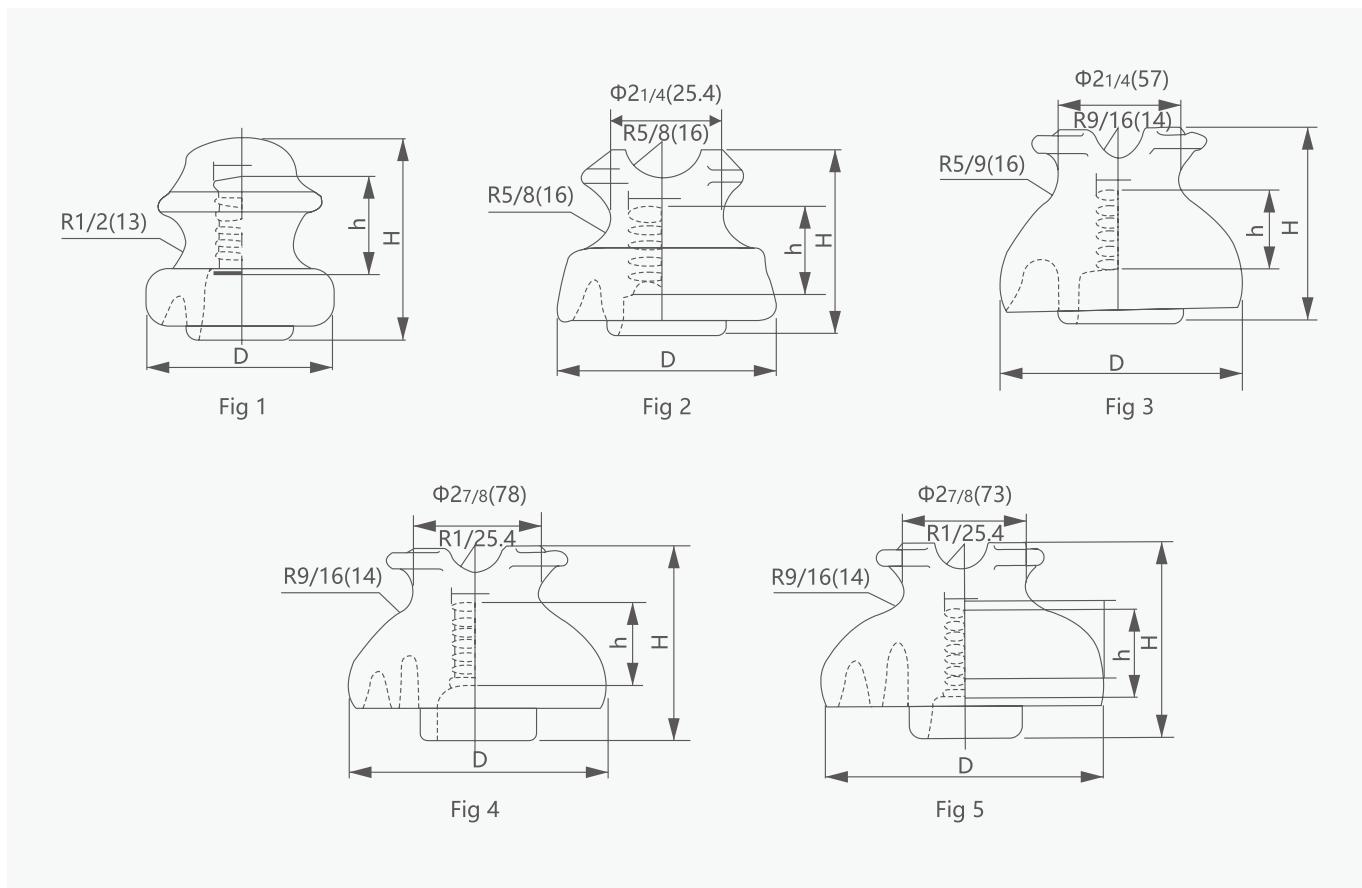
Fig 4

Main dimensions and standard parameter

ANSI class	Fig	Main dimension in(mm)		Creepage distance in(mm)	Combined M&E strength IB(kN)	Mechanical impact strength in-lb(N-m)	Time load test value lb(kN)	Average Flashover voltage				Power frequency puncture voltage KV	Radio Influence voltage						
								Power frequency		Critical Impulse			Test Voltage to ground KV	IMHz Max Rvatt MHz					
		D (max)	H					Dry kV	Wet kV	Positive kV	Negative kV								
52-1	1	61/2 (165)	51/2 (141)	7 (178)	10000 (44)	45 (5.0)	6000 (27)	60	30	100	100	80	7.5	7.5					
52-2	1	8(203)	53/4 (146)	81/4 (210)	15000 (67)	50 (5.5)	10000 (44)	65	35	115	115	90	7.5	7.5					
52-3	2	103/4 (273)	103/4 (146)	111/2 (292)	15000 (67)	55 (6.0)	10000 (44)	80	50	125	130	110	10	10					
52-4	2	103/4 (273)	53/4 (146)	111/2 (292)	15000 (67)	55 (6.0)	10000 (44)	80	50	125	130	110	10	10					
52-5	2	103/4 (273)	53/4 (146)	11 (279)	25000 (111)	60 (7.0)	15000 (67)	80	50	125	130	110	10	10					
52-6	3	103/4 (273)	53/4 (146)	11 (279)	25000 (111)	60 (7.0)	15000 (67)	80	50	125	130	110	10	10					
52-9	4	41/2 (114)	61/4 (160)	63/4 (171)	10000 (44)	45 (5.0)	6000 (27)	60	30	100	90	80	7.5	7.5					

Surge Arrester

Polymer Insulators

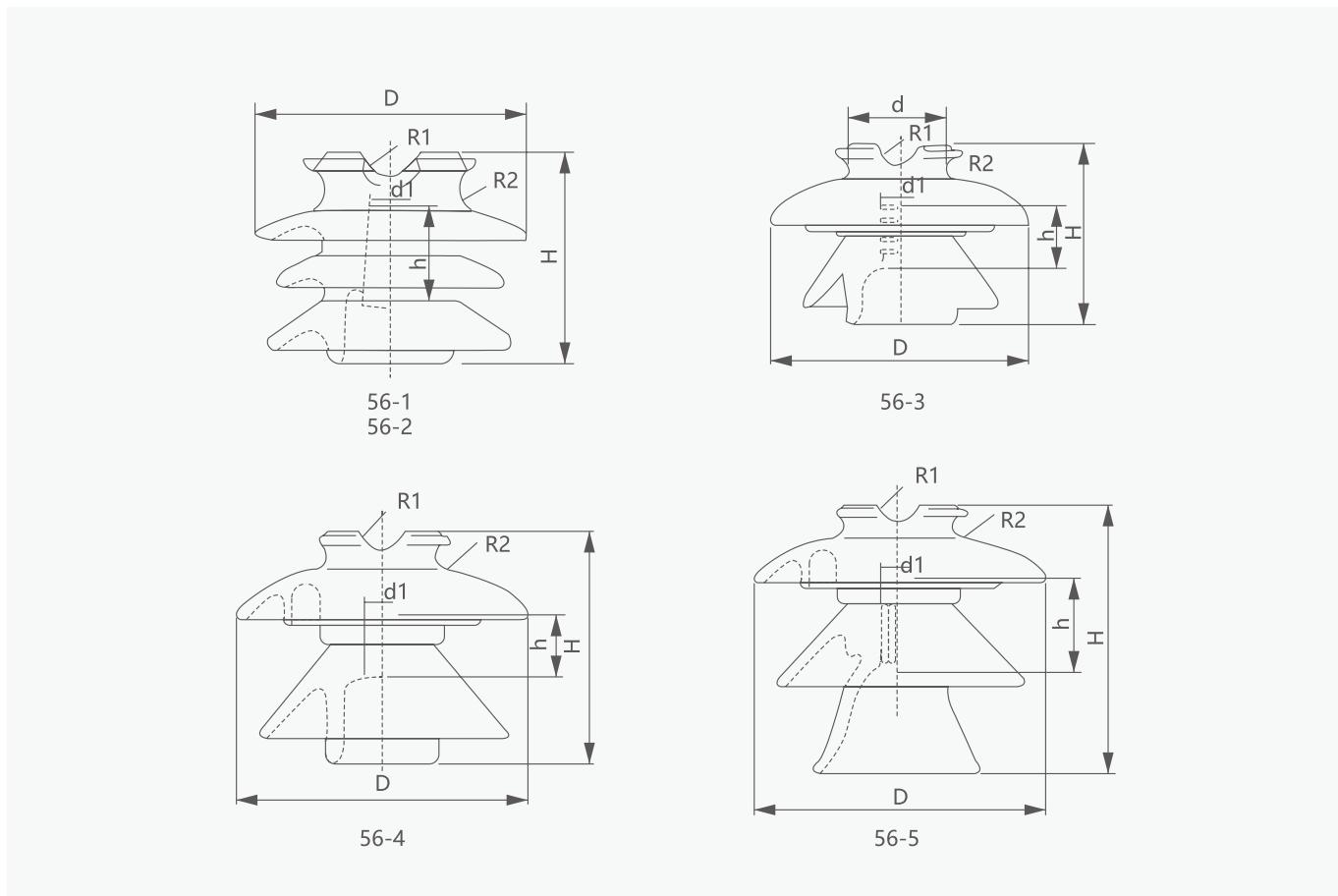


Main dimensions and standard parameter

ANSI class	Fig	Main dimension in(mm)		Creepage distance in(mm)	Combined M&E strength IB(kN)	Mechanical impact strength in-lb(N·m)	Time load test value lb(kN)	Average Flashover voltage				Power frequency puncture voltage KV	Radio Influence voltage	
		D(max)	H					Power frequency	Critical Impulse	Dry KV	Wet KV	Positiv KV	Negative KV	
55-1	1	31/4 (83)	31/2 (89)	13/4 (44)	4 (102)	4 (102)	3000 (13)	35	20	50	70	50	5	2500/50
55-2	2	33/4 (95)	31/4 (83)	31/2 (83)	5 (127)	4 (102)	2500 (11)	50/45	25	75/70	95/85	70	5	2500/50
55-3	3	43/4 (121)	33/4 (95)	31/2 (83)	7 (178)	5 (127)	2500 (11)	65/55	35/30	100/90	130/110	90	10	5500/50
55-4	4	51/2 (140)	43/8 (111)	13/4 (44)	9 (229)	5 (127)	3000 (13)	70/65	40/35	110/105	140/130	95	10	5500/50
55-5	5	7 (178)	43/8 (124)	2 (51)	12 (305)	6 (125)	3000 (13)	85/80	45	140/130	170/150	15	15	8000/100

Surge Arrester

Polymer Insulators



Main dimensions and standard parameter

ANSI class	Main dimension in(mm)							Creepage distance in(mm)	Min.Pin length in (mm)	Cantilever strength lb (kn)	Average flashover voltage				Power frequency puncture voltage KV	Radio Influence voltage	
	D	H	d	d1	h	R1	R2				Power Frequency	Critical Impulse	Dry KV	Wet KV	Positive KV	Negative KV	Test voltage to ground KV
56-1	7 1/2 (191)	5 3/4 (146)	3 1/2 (89)	13/8 (35)	2 (51)	3/4 (19)	9/14 (19)	13 (330)	6 (152)	2500 (11)	95	60	150	190	130	15	100
56-2	9 (229)	6 1/2 (165)	4 (102)	13/8 (35)	2 (51)	3/4 (19)	9/14 (19)	17 (432)	7 (178)	3000 (13.2)	110	70	175	225	145	22	100
56-3	10 1/2 (267)	7 1/2 (241)	4 (102)	13/8 (35)	2 (51)	3/4 (19)	9/14 (19)	21 (533)	8 (203)	3000 (13.2)	125	80	200	265	165	30	200
56-4	12 (305)	12 1/2 (241)		13/8 (35)	2 (51)	3/4 (19)	9/14 (19)	27 (385)	10 (254)	3000 (13.2)	140	95	225	310	185	30	200
56-5	13 1/2 (343)	12 1/2 (318)		13/8 (35)	2 (51)	3/4 (19)	9/14 (19)	34 (864)	12 (305)	3000 (13.2)	175	125	270	340	225	44	200

Surge Arrester

Polymer Insulators

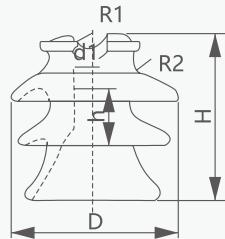


Fig 1

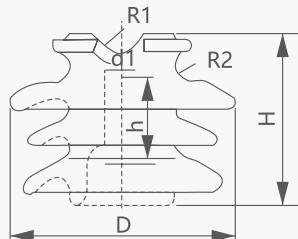


Fig 2

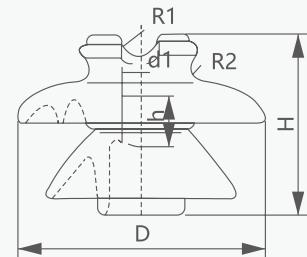


Fig 3

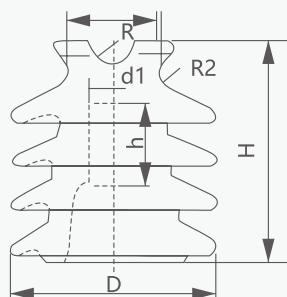


Fig 4

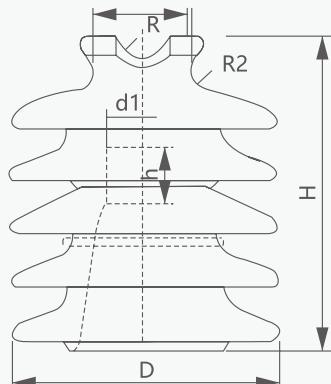


Fig 5

Main dimensions and standard parameter

Type	Fig	Main dimension in(mm)								Creepage distance in(mm)	Cantilever strength lb (kn)	Withstand voltage		Power frequency Puncture voltage KV	Radio influence voltage		Used spindle
		D	H	d	d1	h	R1	R2				1m Werpower frequency withstand voltage KV	Dry Impulse withstand voltage (peak)KV		Test voltage to ground KV	IMHz Max Rlvatl MHz	
P-11-Y	1	140	133	18.29	48	13	9.5		240	11	45	80	150	15	8000/100	small steel head	
P-15-Y	1	152	137	18.29	48	13	12.7		298	11	50	95	150	15	8000/100		
P-22-Y	2	230	165	27.78	52.63	19	14.3		432	11	70	125	200	22	12000/100		
P-33-Y	3	279	244	27.78	52.63	19	13		630	13.8	90	170	210	30	16000/100		
PW-15-Y	4	170	185		52.63	16	16	76	432	11	50	95	150	22	12000/100		
PW-22-Y	5	205	255		52.63	16	16	76	673	11	70	125	200	30	16000/100		
PW-33-Y	5	240	320		52.63	16	16	76	851	11	90	170	210	44	25000/100		

Note:

The left side of slant is Comman glaze, the right side of slant is semiconductor glaze.

Surge Arrester

Polymer Insulators

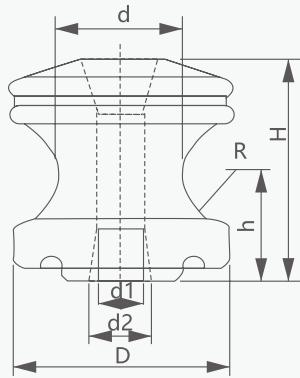


Fig 1

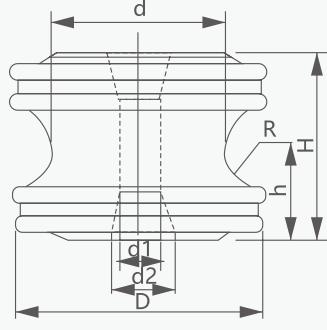


Fig 2

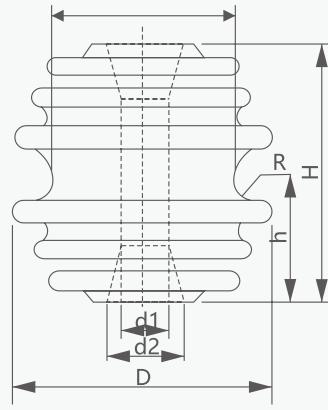


Fig 3

Main dimensions and standard parameter

Type	53-1	53-2	53-3	53-4	53-5
Cat.No	006008	006009	006010	006011	006012
Fig.No	2	1	2	2	3
Main dimensions(mm)	H	54	76	81	76
	h	27	38	40.5	38
	D	57	79	76	105
	d	45	45	45	102
	d1	8	18	18	73
	d2	22	24	24	73
	R	11	18	11	11
Mechanical failing load (kg)	907	1360	1814	2041	2722
Flashover (min)	Power frequency	Dry(kV)	20	25	25
		Wet (kV)	8	12	12
		Upright	10	15	15
Weight(kg)	0.22	0.55	0.60	1.15	1.20

Surge Arrester

Polymer Insulators

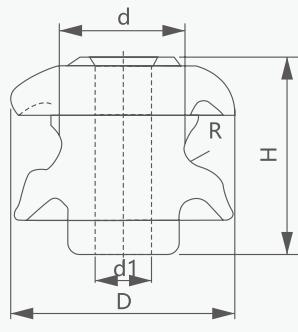


Fig 1

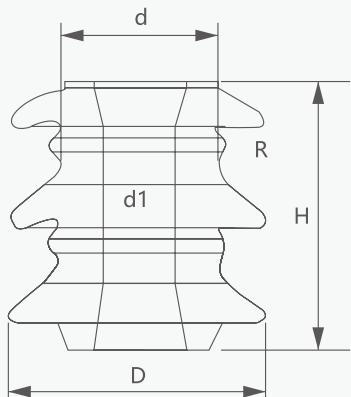


Fig 2

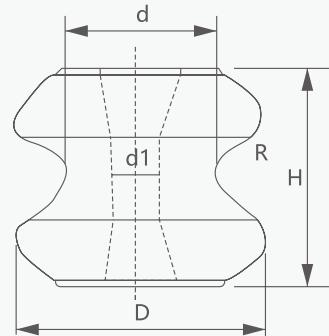


Fig 3

Main dimensions and standard parameter

Type	006006	006005	006007	006013	006014	006015
Cat.No	2	1	1	3	3	3
Fig.No	ED-2(C)	ED-2(B)	ED-2(B)1	11617	1618-1	1618-2
Main dimensions(mm)	H	80	76	76	65	75
	D	80	89	89	76	89
	d	50	48	48	46	55
	d1	22	21	17.5	17.6	17
	R	6	10	10	9	12.5
Mechanical failing load (kg)		13	12	12	9	10
Flashover (min)	Power frequency	Dry(kV)	25	25	20	25
		Wet(kV)	15	12	9	12
Weight(kg)		0.50	0.50	0.50	0.4	-

Fired blank: bron glaze