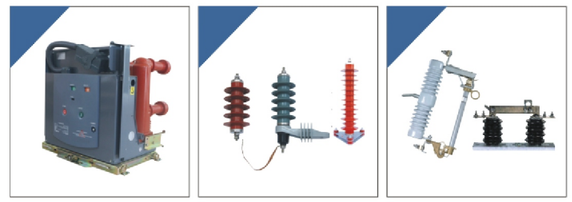
CN Aiso

HIGH-VOLTAGE SERIES
PRODUCT CATALOGUE

High voltage breaker
Lightning arrester
Drop-out fuse cutout
Disconnecting switch



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CN Aiso

YUEQING AISO ELECTRIC CO.,LTD.

Add: Xinguang Industrial Zone, Liushi, Yueqing, Wenzhou, Zhejiang, China
Tel: +86-577-62697170
Mobile Phone: +86-13566272279
WeChat: +0086-13566272279
What's app: +0086-13695879122
Skype: eleven@aisoelectric.com
E-mail: aiso@aisoelectric.com

www.aisoelectric.com

COMPANY PROFILE

WHO WE ARE?

Yueqing AlSO Electric Co., Ltd. located in Liushi Town, Yueqing City, Wenzhou City, Zhejiang Province. We are professional electric manufacturer.

1. Quality is the first, our culture.
2. "With us your money in safe" full refund in case of bad not in accordance with technical requirements or delay delivery time.
3. "Time is gold" for you and for us, we have professional team work whom can making better quality in short time.

Please feel free to contact us for more details.
And fully utilize our 8 years experience and wide contacts.



WORKSHOP



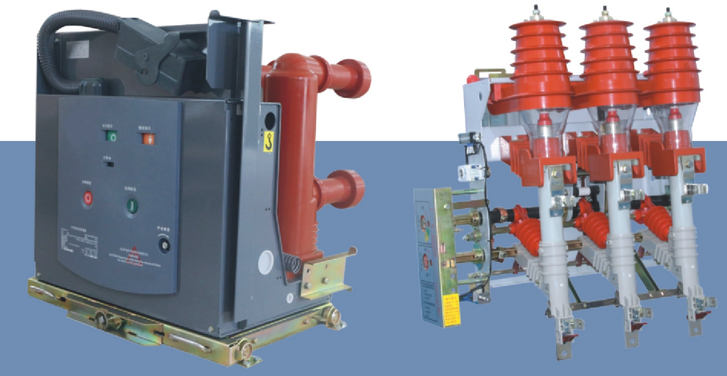



With excellent team work, professional engineers and advanced equipments, we're able to provide quality products and offer you the best customized solutions.

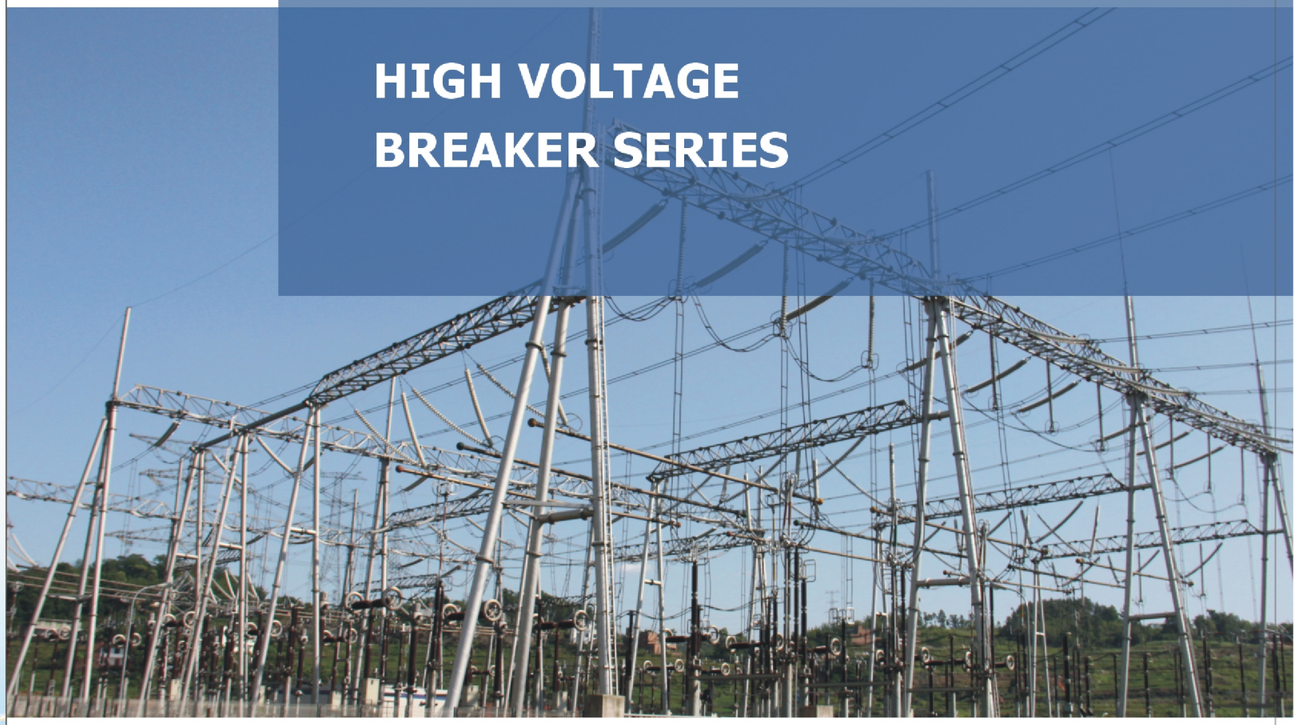
CONTENTS

Committed to creating a better, safer and more efficient electrical world for global customers

CN Aiso



HIGH VOLTAGE BREAKER SERIES



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ZN63(VS1)-12

Indoor high-voltage alternating-current vacuum circuit breaker

General

ZN63(VS1) indoor high-voltage alternating-current vacuum circuit breaker has a frequency of 50Hz and a rated voltage of 12kV. It applies to the electrical equipment control and protection in industrial and mining enterprises, power plants and substations, particularly to the places needing frequent operation. It can be fixed in a switch cabinet or installed on a handcart.

With stable performance and convenient installation, it is the best choice for the control and protection of high-voltage power transmission and distribution systems.

Product standards

ZN63(VS1) indoor high-voltage alternating-current vacuum circuit breaker is produced in line with the following standards and codes.

- IEC 62271-100 High-voltage alternating-current circuit-breakers
- GB/T 11022-2011 Common specifications for high-voltage switchgear and controlgear standards
- GB 1984 High-voltage alternating-current circuit-breakers
- GB 311.1 Insulation co-ordination for high voltage transmission and distribution equipment

Operating conditions

Normal operating conditions

- Ambient temperature: - 40℃~+40℃ (below 35℃ within 24 hours)
- Relative humidity: ≤95% (daily average) or ≤90% (monthly average)
- Altitude: ≤ 1000m

Technical parameters

1.1 Technical parameters

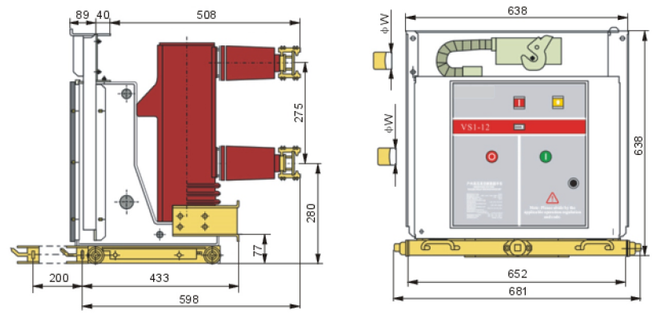
Item		Unit	Reference value
Rated voltage		kV	12
Rated insulation level	Power frequency voltage(when losing a circuit)	kV	Breaker 42
	Impulse withstand voltag(when losing a circuit)	kV	Breaker 75
Rated frequency		Hz	50/60
Rated current		A	630/1250/1600/2000/2500/3150/4000
Rated short-circuit breaking current		kA	20,25,31.5,40
Rated short-circuic making current (peak value)		kA	50,63,80,100
Rated short-time withstand current		kA	20,25,31.5,40
Rated withstand current (peak value)		kA	50,63,80,100
Required operation sequence			O-0.3s-CO-180s-CO
Rated short-circuit duration		s	4
Times of making-breaking with the rated short-circuit current		Times	30
Mechanical life		Times	10000
Weight		kg	110

1.2 Mechanical parameters

Item	Unit	Reference value
Gap of contacts	mm	11±1
Contact overtravel	mm	3.5±0.5
Average making speed	m/s	0.6±0.2
Average breaking speed	m/s	1.1±0.2
Bounce time in contact making	ms	≤2
Non-synchronous making/breaking of contact	ms	≤2 ≤3(40kA)
Resistance of the circuit of each phase	μΩ	≤80
Permissible total wear thickness of the moving/fixed contact	mm	3

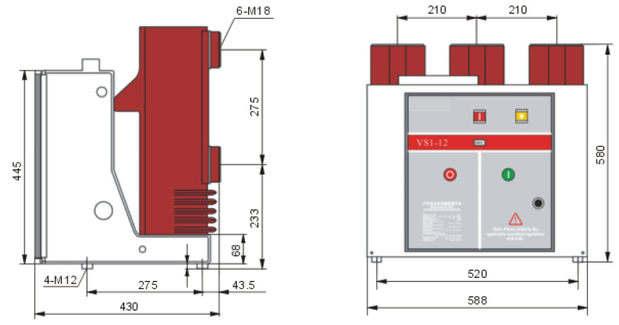
Overall and Installation dimension

Overall dimension of VS1-12(wheeled) indoor high-voltage alternating-current vacuum circuit breaker(cabinet width: 800mm)



Rated current(A)	630	1250	1600
Rated short-time withstand current(kA)	20,25,31.5	25,31.5,40	31.5,40
Fixed contact size D(mm)	Φ35	Φ49	Φ55
Interphase distance(mm)		210±1.5	
Drive travel(mm)		200±2	

Overall dimension of VS1-12(fixed) indoor high-voltage alternating-current vacuum circuit breaker(cabinet width: 800mm)



Rated current(A)	630	1250	1600
Rated short-time withstand current(kA)	20,25,31.5	25,31.5,40	31.5,40
Interphase distance(mm)		210±1.5	

VF(R)-12

Indoor embedded high-voltage alternating-current vacuum load switch – fuse combination ("vacuum load switch")

General

VF(R)-12 indoor embedded high-voltage alternating-current vacuum load switch-fuse combination ("vacuum load switch") is a new-generation vacuum switching equipment developed based on unique design ideas to meet the market demand. It is widely used for indoor armored air-insulated switch cabinets. In normal conditions, it can operate within its technical parameters in any grid of the specified voltage level safely and stably.

Product standards

The VF(R)-12 vacuum load switch is produced in line with the following standards and codes.

- GB 3804-2004 High-voltage load alternating-current switches for rated voltage above 3.6 kV and less than 40.5 kV
- GB 16926-2009 High-voltage load alternating-current switch-fuse combinations

Operating conditions

Normal operating conditions

- Ambient temperature: - 40℃~+40℃ (below 35℃ within 24 hours)
- Relative humidity: ≤95% (daily average) or ≤90% (monthly average)
- Altitude: ≤ 1000m

Technical parameters

Item		Unit	Reference value			
			VF-12/T630-20 Vacuum load switch	VFR-12/T125-50 Vacuum load switch-fuse combination	VFH-12/T630-25 High breaking capacity vacuum switch	VFHR-12/T125-50 High breaking capacity vacuum switch-fuse combination
Rated voltage		kV	12	12	12	12
Rated insulation level	Lightning impulse withstand voltage	kV	75	75	75	75
	1min power-frequency withstand voltage	kV	42	42	42	42
Rated frequency		Hz	50/60	50/60	50/60	50/60
Rated current		A	630	125(fuse)	630	125(fuse)
Rated short-circuit breaking current		kA	-	50(fuse)	25(are suppression chamber)	25(are suppression chamber)
Rated short-circuic making current (peak value)		kA	50	-	63	-
Rated short-time withstand current		kA	20	-	25	-
Rated withstand current (peak value)		kA	50	-	63	-
Rated breaking current of cable during charge		A	16	-	-	-
Rated breaking current of no-load transformer		kVA	1250	-	1250	-
Rated breaking take-over current		A	-	3150	-	3150
Breaking times of the rated short-circuit current		Times				
Mechanical life			M2 level	M2 level	M2 level	M2 level
Weight		kg	125			

Transformer capacity and fuse selection

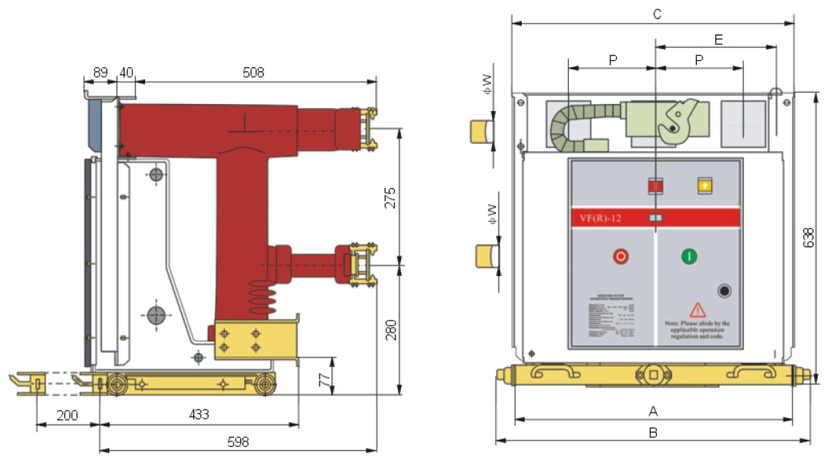
- The fuse can cut off a large short-circuit current in less than 10 ms and its breaking current can be up to 50KA. Thus, it can protect the transformer most effectively.
- In terms of match between the transformer and the fuse (Table 1), the potential surge current of the fuse must be considered. Thus, fusing current of the fuse must be 1.6 times of the rated value; designer must consider possible fluctuations of other parameters of the grid and reserve margins for them. If a fuse is selected for high-voltage motor protection, designer must consider frequency of start of the high-voltage motor because frequent starts of the high-voltage motor will result in the fuse's failure when timely cooling is not available.

Fuse selection

Primary voltage of the transformer(kV)	Capacity of the transformer(kVA)	Model of the fuse		Rated current of the fuse(A)
		Model for the domestic market	Model for international market	
6.6	200	XRNT-10	12kV BDGHC	31.5
	250			40
	300/315			50
	400		12kV BDGHC	63
	500			80
	630			90

Overall and Installation dimension

Overall dimension of VF(R)-12(wheeled) indoor high-voltage alternating-current vacuum circuit breaker



Cabinet width(mm)	P(mm)	A(mm)	B(mm)	C(mm)	E(mm)	ΦW(mm)
650	150	500	530	490	203	35
800	210	650	680	640	278	35
1000	275	850	880	840	378	35

ZN63(VS1)-24

Indoor high-voltage alternating-current vacuum circuit breaker

General

ZN63(VS1) indoor high-voltage alternating-current vacuum circuit breaker has a frequency of 50Hz and a rated voltage of 12kV. It applies to the electrical equipment control and protection in industrial and mining enterprises, power plants and substations, particularly to the places needing frequent operation. It can be fixed in a switch cabinet or installed on a handcart.

With stable performance and convenient installation, it is the best choice for the control and protection of high-voltage power transmission and distribution systems.

Product standards

ZN63(VS1) indoor high-voltage alternating-current vacuum circuit breaker is produced in line with the following standards and codes.

- IEC 62271-100 High-voltage alternating-current circuit-breakers
- GB/T 11022-2011 Common specifications for high-voltage switchgear and controlgear standards
- GB 1984 High-voltage alternating-current circuit-breakers
- GB 311.1 Insulation co-ordination for high voltage transmission and distribution equipment

Operating conditions

Normal operating conditions

- Ambient temperature: - 40℃~+40℃ (below 35℃ within 24 hours)
- Relative humidity: ≤95% (daily average) or ≤90% (monthly average)
- Altitude: ≤ 1000m

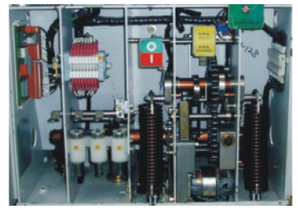
Technical parameters

1.1 Technical parameters

Item		Unit	Reference value
Rated voltage		kV	24
Rated insulation level	Lightning impulse withstand voltage	kV	145
	1min power-frequency withstand voltage	kV	65
Rated frequency		Hz	50/60
Rated current		A	630/1250/1600/2000/2500/3150
Rated short-circuit breaking current		kA	20/25/31.5
Rated short-circuic making current (peak value)		kA	50,63,80
Rated short-time withstand current		kA	20/25/31.5/40
Rated withstand current (peak value)		kA	50,63,80
Required operation sequence			O-0.3s-CO-180s-CO
Rated short-circuit duration		s	4
Times of making-breaking with the rated short-circuit current		Times	30
Mechanical life			M2 level
Weight		kg	150

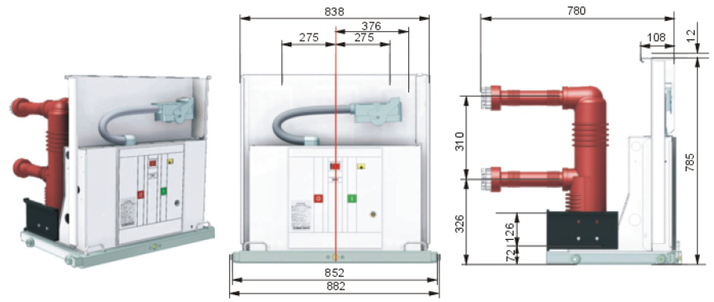
Actuator of VS1-24

The actuator employs spring energy storage which can be done electrically or manually. When the circuit breaker is operating, the energy generated by the energy storage spring is transferred to the connecting rod mechanism through an output cam and then to the movable contact through the connecting rod mechanism. The advanced and appropriate buffer avoids bounces in breaking and reduces the impact and vibration in breaking. The actuator almost needs no maintenance or adjustment. It can operate for up to 10,000 times.



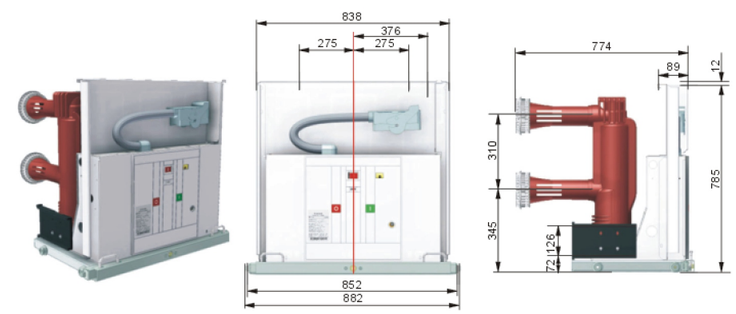
Overall and Installation dimension

Overall dimension of VS1-24(wheeled) embedded indoor high-voltage alternating-current vacuum circuit breaker



Rated current(A)	630	1250	1600
Rated short-time withstand current(kA)	20,25,31.5	25,31.5	31.5
Fixed contact size D(mm)	Φ35	Φ49	Φ55
Interphase distance(mm)		275±1.5	
Drive travel(mm)		300±2	

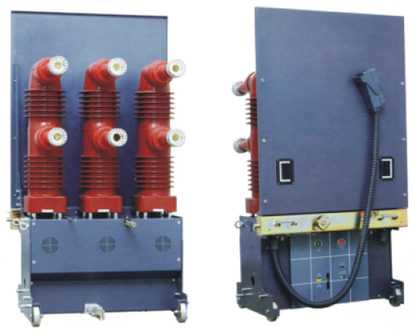
Overall dimension of VS1-24(fixed) indoor high-voltage alternating-current vacuum circuit breaker(large-current)



Rated current(A)	2000	2500	3150
Rated short-time withstand current(kA)	31.5	31.5	31.5
Fixed contact size D(mm)	Φ79	Φ109	Φ109
Interphase distance(mm)		275±1.5	
Drive travel(mm)		300±2	

VCR1-40.5

Indoor high-voltage alternating-current vacuum circuit breaker



◆ General

VCR1 indoor high-voltage alternating-current vacuum circuit breaker has a frequency of 50Hz and a rated voltage of 40.5kV. It applies to the electrical equipment control and protection in industrial and mining enterprises, power plants and substations, particularly to the places needing frequent operation. It can be fixed in a switch cabinet or installed on handcart.

With stable performance and convenient installation, it is the best choice for the control and protection of high voltage power transmission and distribution systems.

◆ Product standards

VCR1 indoor high-voltage alternating-current vacuum circuit breaker is produced in line with the following standards and codes.

- IEC 62271-100 High-voltage alternating-current circuit-breakers
- GB/T 11022-2011 Common specifications for high-voltage switchgear and controlgear standards
- GB 1984 High-voltage alternating-current circuit-breakers
- GB 311.1 Insulation co-ordination for high voltage transmission and distribution equipment

◆ Operating conditions

Normal operating conditions

- Ambient temperature: - 40℃~+40℃ (below 35℃ within 24 hours)
- Relative humidity: ≤95% (daily average) or ≤90% (monthly average)
- Altitude: ≤ 1000m

◆ Technical parameters

1.1 Technical parameters

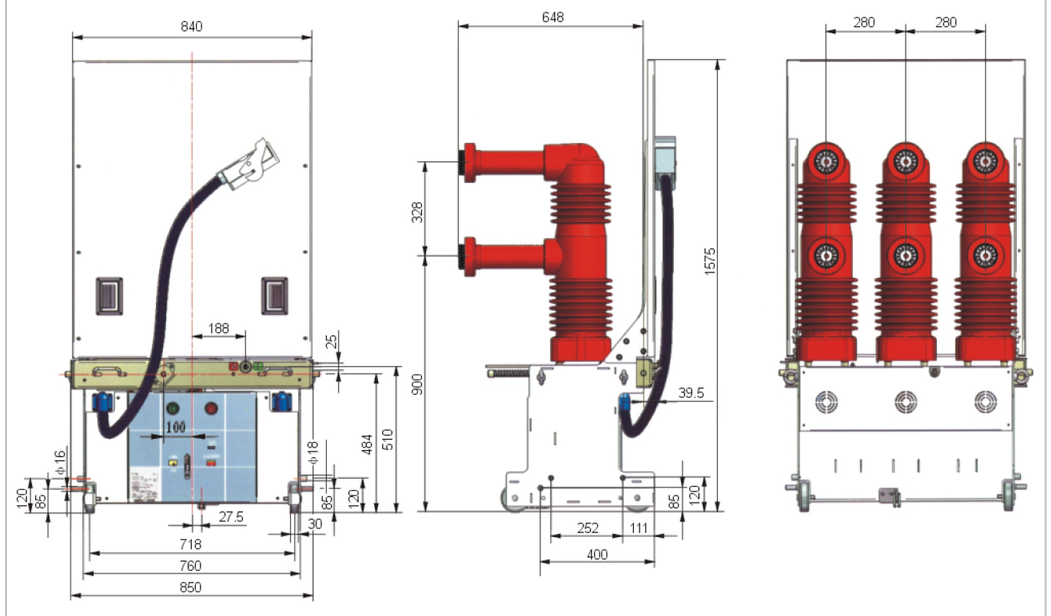
Item		Unit	Reference value
Rated voltage		kV	40.5
Rated insulation level	Lightning impulse withstand voltage	kV	185
	1min power-frequency withstand voltage	kV	95
Rated frequency		Hz	50/60
Rated current		A	630/1250/1600/2000/2500
Rated short-circuit breaking current		kA	20/25/31.5
Rated short-circuic making current (peak value)		kA	50,63,80
Rated short-time withstand current		kA	20/25/31.5
Rated withstand current (peak value)		kA	50,63,80
Required operation sequence			O-0.3s-CO-180s-CO
Rated short-circuit duration		s	4
Times of making-breaking with the rated short-circuit current		Times	30
Mechanical life			M2 level
Weight		kg	320

1.2 Mechanical parameters

Item	Unit	Reference value
Gap of contacts	mm	20±2
Contact overtravel	mm	6±1
Average making speed	m/s	0.6±0.2
Average breaking speed	m/s	1.2±0.3
Bounce time in contact making	ms	≤3
Non-synchronous making/breaking of contact	ms	≤2
Resistance of the circuit of each phase	μΩ	≤80
Permissible total wear thickness of the moving/fixed contact	mm	3

◆ Overall and Installation dimension

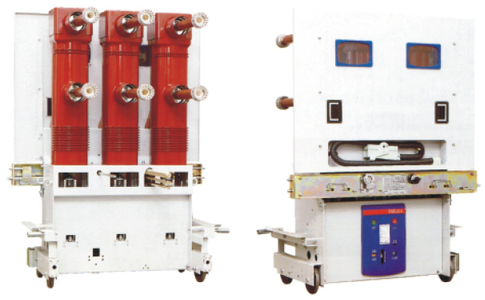
Overall dimension of VCR1-40.5(embedded and wheeled) indoor high-voltage alternating-current vacuum circuit breaker



Rated current(A)	630	1250	1600	2000	2500
Fixed contact size D(mm)	Φ35	Φ49	Φ55	Φ79	Φ79
Interphase distance(mm)	280				
Drive travel(mm)	450±2				

ZN85-40.5

Indoor high-voltage alternating-current vacuum circuit breaker



◆ General

ZN85 indoor high-voltage alternating-current vacuum circuit breaker has a frequency of 50Hz and a rated voltage of 40.5kV. It applies to the electrical equipment control and protection in industrial and mining enterprises, power plants and substations, particularly to the places needing frequent operation. It can be fixed in a switch cabinet or installed on a handcart.

With stable performance and convenient installation, it is the best choice for the control and protection of high-voltage power transmission and distribution systems.

◆ Product standards

ZN85 indoor high-voltage alternating-current vacuum circuit breaker is produced in line with the following standards and codes.

- IEC 62271-100 High-voltage alternating-current circuit-breakers
- GB/T 11022-2011 Common specifications for high-voltage switchgear and controlgear standards
- GB 1984 High-voltage alternating-current circuit-breakers
- GB 311.1 Insulation co-ordination for high voltage transmission and distribution equipment

◆ Operating conditions

Normal operating conditions

- Ambient temperature: - 40℃~+40℃ (below 35℃ within 24 hours)
- Relative humidity: ≤95% (daily average) or ≤90% (monthly average)
- Altitude: ≤ 1000m

◆ Technical parameters

1.1 Technical parameters

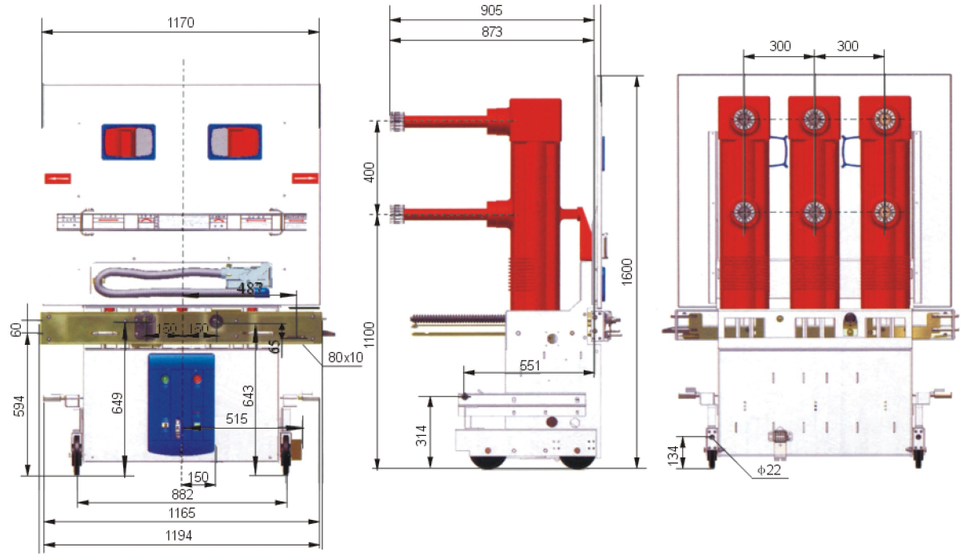
Item		Unit	Reference value
Rated voltage		kV	40.5
Rated insulation level	Lightning impulse withstand voltage	kV	185
	1min power-frequency withstand voltage	kV	95
Rated frequency		Hz	50/60
Rated current		A	630/1250/1600/2000/2500/3150
Rated short-circuit breaking current		kA	20/25/31.5
Rated short-circuic making current (peak value)		kA	50,63,80
Rated short-time withstand current		kA	20/25/31.5
Rated withstand current (peak value)		kA	50,63,80
Required operation sequence			O-0.3s-CO-180s-CO
Rated short-circuit duration		s	4
Times of making-breaking with the rated short-circuit current		Times	30
Mechanical life			M2 level
Weight		kg	350

1.2 Mechanical parameters

Item	Unit	Reference value
Gap of contacts	mm	20±2
Contact overtravel	mm	6±1
Average making speed	m/s	0.6±0.2
Average breaking speed	m/s	1.5~2.0
Bounce time in contact making	ms	≤3
Non-synchronous making/breaking of contact	ms	≤2
Resistance of the circuit of each phase	μΩ	≤80
Permissible total wear thickness of the moving/fixed contact	mm	3

◆ Overall and Installation dimension

Overall dimension of ZN85-40.5(insulating cylinder handcart) indoor high-voltage alternating-current circuit breaker



Rated current(A)	630	1250	1600	2000	2500
Rated breaking current(kA)	20,25,31.5	20,25,31.5	25,31.5	31.5	31.5
Fixed contact size D(mm)	Φ35	Φ49	Φ55	Φ79	Φ109
Interphase distance(mm)	300±1.5				
Handcart travel(mm)	610±2				

VCR1-40.5

Indoor auxiliary handcart

General

VCR1 auxiliary handcart designed and produced by us can be moved easily and avoid damage of the drive mechanism due to misoperation. It applies to the 50Hz and 40.5kV three-phase alternating-current single-bus segmented power systems in KYN61-40.5 armored mobile metallic enclosure switchgears. Used with different primary components, it can realize bus connection, electric energy measurement, and overload prote -ction or short-circuit protection for power equipment and, during system overhauls, functional components protection and interlocking.

Product standards

VCR1 auxiliary handcart is produced in line with the following standard and code.

- GB/T 11022-2011 Common specifications for high-voltage switchgear and controlgear standards
- IEC 62271-2007 High-voltage switchgear and controlgear - Part 1: Common specifications

Operating conditions

Normal operating conditions

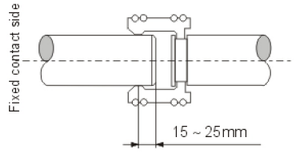
- Ambient temperature: - 40℃~+40℃ (below 35℃ within 24 hours)
- Relative humidity: ≤95% (daily average) or ≤90% (monthly average)
- Altitude: ≤ 1000m

Technical parameters

1.1 Technical parameters

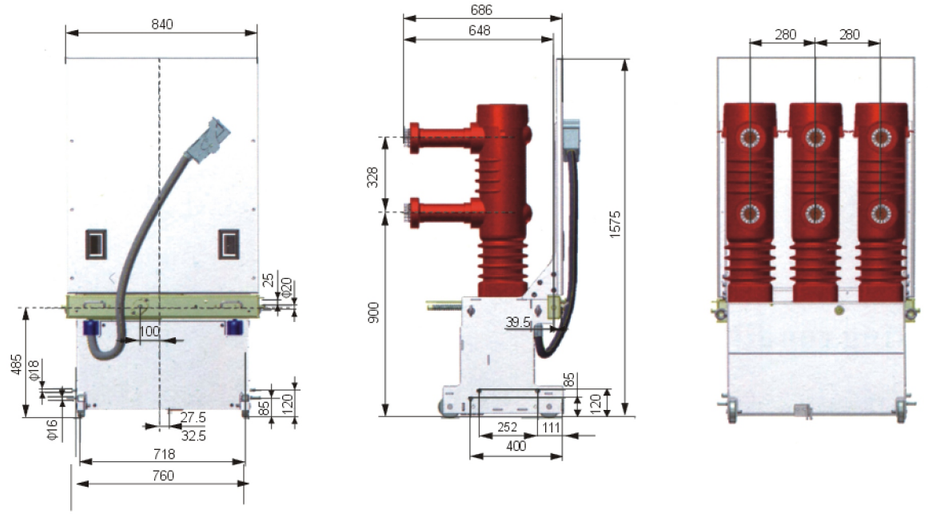
Item		Unit	Reference value
Rated voltage		kV	40.5
Rated insulation level	Lightning impulse withstand voltage	kV	185
	1min power-frequency withstand voltage	kV	95
Rated frequency		Hz	50/60

1.2 Drawing of linkage between the moving contact and the fixed contact



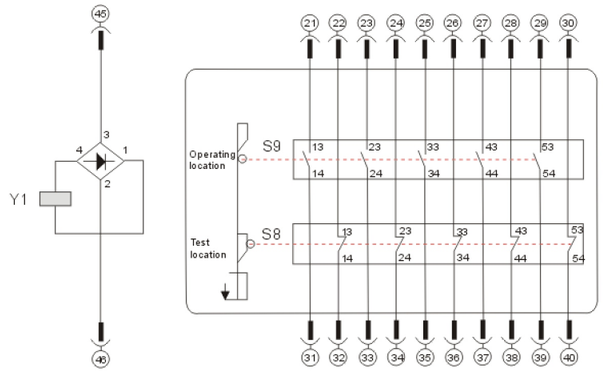
Overall and Installation dimension

Overall dimension of VCR1-40.5(totally enclosed) isolating handcart(cabinet width: 1200mm)



Rated current(A)	630	1250	1600	2000	2500
Fixed contact size D(mm)	Φ35	Φ49	Φ55	Φ79	Φ79
Interphase distance(mm)	280				
Handcart travel(mm)	450±2				

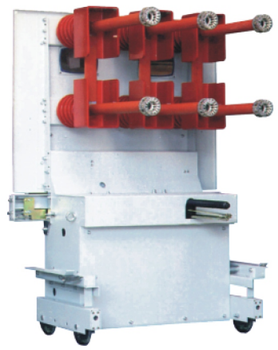
Schematic diagram



S9	For the auxiliary switch in the operating position
S8	For the auxiliary switch in the operating position
Y1	Blocking electrom agnet (optional part)

ZN85-40.5

Indoor auxiliary handcart



General

ZN85 auxiliary handcart designed and produced by us has a screw rod drive mechanism and can be moved easily and avoid damage of the drive mechanism due to misoperation. It applies to the 50Hz and 40.5kV three-phase alternating-current single-bus segmented power systems in KYN61-40.5 armored mobile metallic metal-enclosed switchgears. Used with different primary components, it can realize bus connection, electric energy measurement, and overload protection or short-circuit protection for power equipment and, during system overhauls, functional component and interlocking.

Product standards

ZN85 auxiliary handcart is produced in line with the following standard and code.

- GB/T 11022-2011 Common specifications for high-voltage switchgear and controlgear standards
- IEC 62271-2007 High-voltage switchgear and controlgear - Part 1: Common specifications

Operating conditions

Normal operating conditions

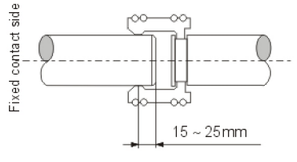
- Ambient temperature: - 40℃~+40℃ (below 35℃ within 24 hours)
- Relative humidity: ≤95% (daily average) or ≤90% (monthly average)
- Altitude: ≤ 1000m

Technical parameters

1.1 Technical parameters

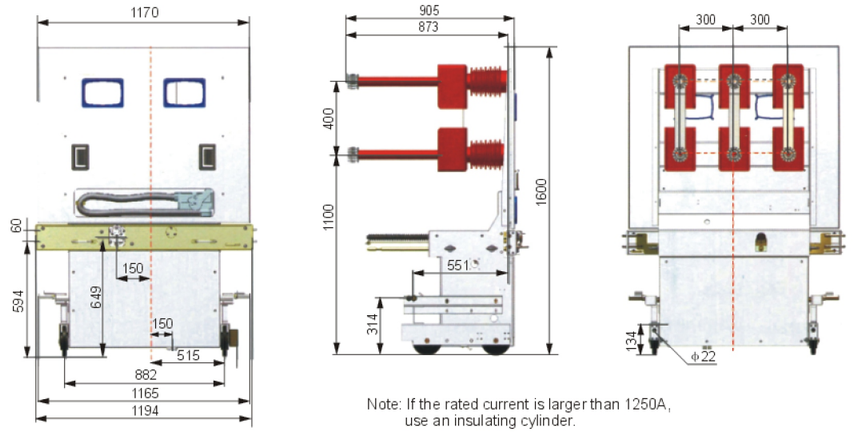
Item		Unit	Reference value
Rated voltage		kV	40.5
Rated insulation level	Lightning impulse withstand voltage	kV	185
	1min power-frequency withstand voltage	kV	95
Rated frequency		Hz	50/60

1.2 Drawing of linkage between the moving contact and the fixed contact



Overall and Installation dimension

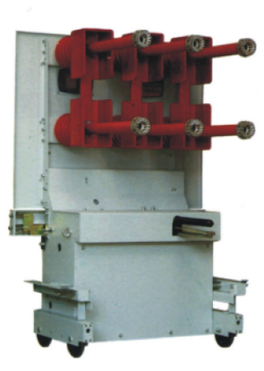
Overall dimension of ZN85-40.5 isolating handcart(cabinet width: 1400mm)

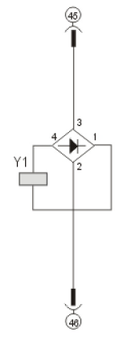


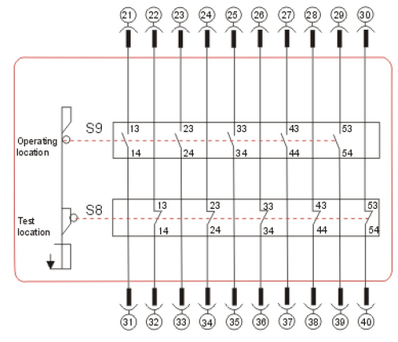
Note: If the rated current is larger than 1250A, use an insulating cylinder.

Rated current(A)	630	1250
Fixed contact size D(mm)	Φ35	Φ49
Interphase distance(mm)	300	
Handcart travel(mm)	610±2	

Schematic diagram







S9	For the auxiliary switch in the operating position
S8	For the auxiliary switch in the operating position
Y1	Blocking electromagnet (optional part)

FZ(R)N21-12

Indoor high-voltage alternating-current vacuum load switch-fuse combination

General

FZ(R)N21-12D indoor high-voltage alternating-current vacuum load switch-fuse combination ("combination" for short) is used in power systems with an AC frequency of 50 Hz and a rated voltage of 10 kV to break load currents, overload currents and short-circuit currents. It particularly applies to the places needing control, protection for oil-free, maintenance-free and frequently-operated ring network power supply units and terminal power supply transformers.

The combination is characterized by large breaking capacity, high safety and stability, long electrical life, support for frequent operation, less maintenance, etc. It has an apparent isolating gap, an earthing switch with making capability, an electric spring actuator and remote control capability.

Product standards

FZ(R)N21 indoor load switch is produced in line with the following standards and codes.

- GB 16926-1997 High-voltage alternating-current load switch-fuse combinations
- IEC 60420 High-voltage alternating-current load switch-fuse combinations

Operating conditions

Normal operating conditions

- Ambient temperature: - 40℃~+40℃ (below 35℃ within 24 hours)
- Relative humidity: ≤95% (daily average) or ≤90% (monthly average)
- Altitude: ≤ 1000m

Technical parameters

1.1 Technical parameters

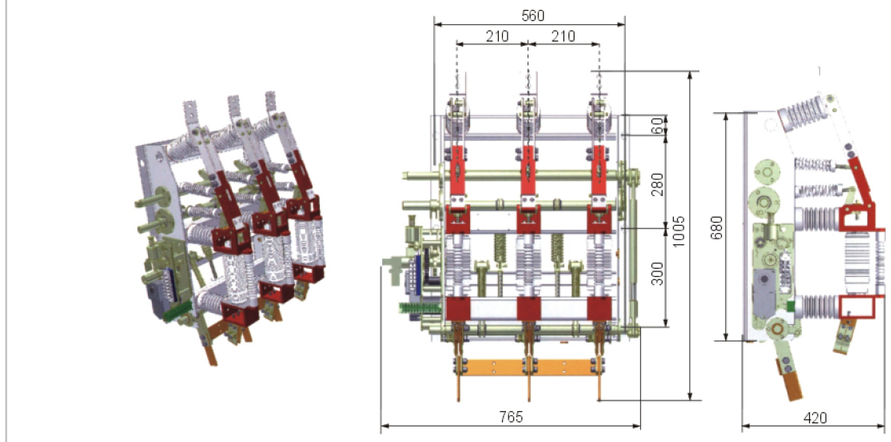
Item		Unit	Reference value
Rated voltage		kV	12
Rated frequency		Hz	50
Maximum rated current of the fuse		A	125
Rated transfer current		A	3150
Rated short-circuit breaking current(expected effective value)		kV	31.5
Rated short-circuic making current (expected peak value)		kV	80
1min power-frequency withstand voltage	Vacuum gap, interpole, pole-to-ground	kV	42
	Isolating gap	kV	48
Lightning impulse withstandvoltage	Vacuum gap, interpole, pole-to-ground	kV	75
	Isolating gap	kV	85
Output energy of the fuse striker		J	2~5

1.2 Technical parameters for disconnector assembling

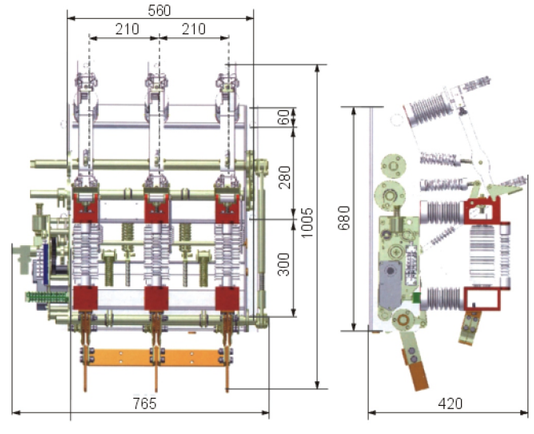
Item	Unit	Reference value
Non-synchronous making of the three contacts	mm	≥3
Deviation of making of the three contacts	mm	≤1
Positive pressure of the contact switch	N	260±30
Size of the gap	mm	≥150
Circuit resistance	μΩ	≤40

Overall and Installation dimension

Overall dimension of FZN21-12D indoor high-voltage alternating-current vacuum load switch(top-in bottom-out and left hand operation)

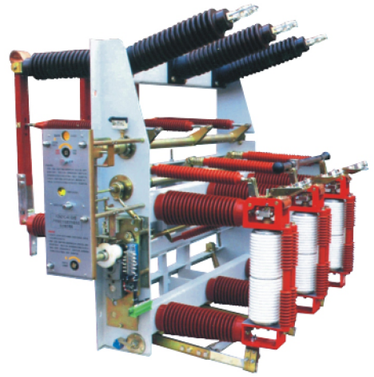


Overall dimension of FZ(R)N21-12D indoor high-voltage alternating-current vacuum load switch-fuse combination(top-in bottom-out and left hand operation)



FZ(R)N21-40.5D

Indoor high-voltage alternating-current
vacuum load switch-fuse combination



◆ General

FZ(R)N21-40.5D indoor high-voltage alternating-current vacuum load switch-fuse combination ("combination" for short) is used in power systems with an AC frequency of 50 Hz and a rated voltage of 40.5 kV to break load currents, overload currents and short-circuit currents. It particularly applies to the places needing control, protection for oil-free, maintenance-free, frequently-operated and ring network power supply units and terminal power supply transformers.

The combination is characterized by large breaking capacity, high safety and stability, long electrical life, support for frequent operation, less maintenance, etc. It has an apparent isolating gap, an earthing switch with making capability, an electric spring actuator and remote control capability.

◆ Product standards

FZ(R)N21 indoor load switch is produced in line with the following standards and codes.

- GB 16926-1997 High-voltage alternating-current load switch-fuse combinations
- IEC 60420 High-voltage alternating-current load switch-fuse combinations

◆ Operating conditions

Normal operating conditions

- Ambient temperature: - 40℃~+40℃ (below 35℃ within 24 hours)
- Relative humidity: ≤95% (daily average) or ≤90% (monthly average)
- Altitude: ≤ 1000m

◆ Technical parameters

1.1 Technical parameters

Item		Unit	Reference value
Rated voltage		kV	40.5
Rated frequency		Hz	50
Rated maximum current of the fuse		A	63
Insulation level	1min power-frequency withstand voltage	kV	Vacuum gap, interpole, pole-to-ground: 95; isolating gap: 110
	Lightning impulse withstand voltage	kV	Vacuum gap, interpole, pole-to-ground: 185; isolating gap: 215
Rated peak withstand current		kA	50
4s rated short-time withstand current		kA	20
Rated breaking current of the active load		A	1250
Rated closed-loop breaking current		A	1250
Rated breaking current of cable during charge		A	21
Rated short-circuit breaking current		kA	31.5
Rated transfer current		A	1200
Fuse model			XRNT3A-40.5/□-31.5
Output energy of the fuse striker		J	2~5
Rated short-circuit making current		kA	80(expected peak value)
Rated peak withstand current of the earthing switch		kA	50
4s rated short-time withstand current of the earthing switch		kA	20
Rated voltage (DC or AC) of the auxiliary circuit		V	220;110
Mechanical life		Cycles	10000

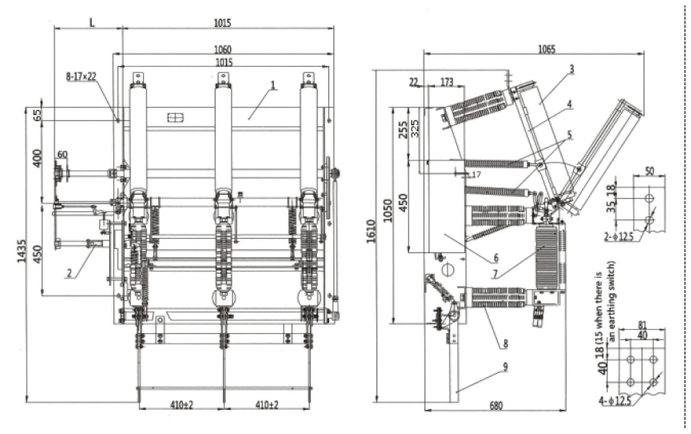
1.2 Technical parameters of the vacuum load switch

Item	Unit	Reference value
Gap of contacts	mm	17±1
Compression travel of the contact spring	mm	4±1
Average making speed	m/s	0.6±0.2
Average breaking speed(gap: 6mm)	m/s	1.5±0.2
Breaking time	ms	≤60
Non-synchronous making/breaking of contacts of the three phases	ms	≤2
Bounce time in contact making	ms	≤3
Distance between live parts and phase-to-ground distance	mm	≥300
Circuit resistance between the upper and lower brackets	μΩ	≤80

◆ Overall and Installation dimension

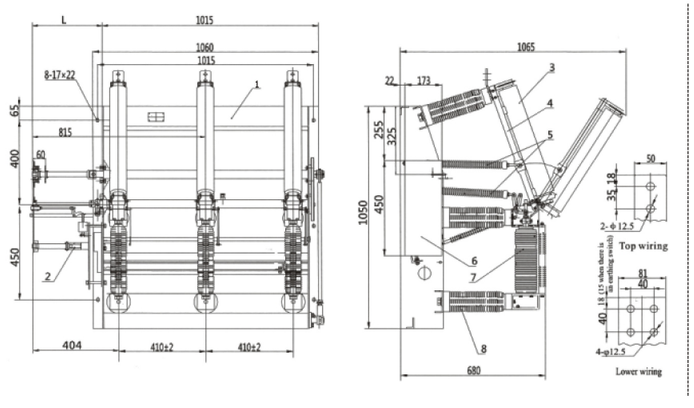
Overall dimension of FZ(R)N21-40.5 indoor high-voltage alternating-current vacuum load switch(side installation and left hand operation)

L: distance between the actuator and the frame (it is usually 330mm, or 430mm or 530mm upon request of the user.)



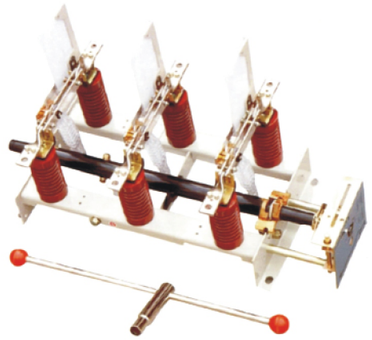
Overall dimension of FZRN21-40.5 load switch(side installation and left hand operation)

L: distance between the actuator and the frame (it is usually 330mm, or 430mm or 530mm upon request of the user.)



FN7-12(R)

Indoor load switch-fuse combination



General

FN7 indoor load switch is used in power systems with an AC frequency of 50Hz and a rated voltage of 10kV to break load currents, overload currents and short-circuit currents. It particularly applies to the places needing control, protection for oil-free, maintenance-free and frequently -operated ring, network power supply units and terminal power supply transformers.

The combination is characterized by large breaking capacity, high safety and stability, long electrical life, support for frequent operation, less maintenance, etc. It has an apparent isolating gap, an earthing switch with making and breaking capability, an electric spring actuator and remote control capability.

Product standards

FN7 indoor load switch is produced in line with the following standards and codes.

- GB 16926-1997 High-voltage alternating-current load switch-fuse combinations
- IEC 60420 High-voltage alternating-current load switch-fuse combinations

Operating conditions

Normal operating conditions

- Ambient temperature: - 40℃~+40℃ (below 35℃ within 24 hours)
- Relative humidity: ≤95% (daily average) or ≤90% (monthly average)
- Altitude: ≤ 1000m

Technical parameters

1.1 Specification and parameters of FN7-12

Note:(-)No, (△)Yes

Name	Type	Model	DS Earthing switch at the incoming cable end	DX Earthing switch at the outgoing cable end	L Interlocking device	R Fuse	RA Striker fuse	F Electrical breaking device
Load switch	Without release	FN7-12	–	–	–	–	–	–
		FN7-12DSL	△	–	△	–	–	–
		FN7-12DXL	–	△	△	–	–	–
		FN7-12R	–	–	–	△	–	–
		FN7-12DSLR	△	–	△	△	–	–
		FN7-12DXLR	–	△	△	△	–	–
	With an impact release	FN7-12RA	–	–	–	–	△	–
		FN7-12RAF	–	–	–	–	△	△
		FN7-12DXLRA	–	△	△	–	△	–
		FN7-12DXLRAF	–	△	△	–	△	△

1.2 FN7-12 Rated parameters

Rated voltage (kV)	Maximum voltage (kV)	Rated current (A)	1min power-frequency withstand voltage(kV)	4S thermal stability current (effective value) (kA)	Dynamic stability current (peak value) (kA)	Short-circuit making current (kA)	Rated breaking current (A)	Rated transfer current (A)
12	12	400	42/48	12.5	31.5	31.5	400	1000
		630	42/48	20	50	50	630	1000

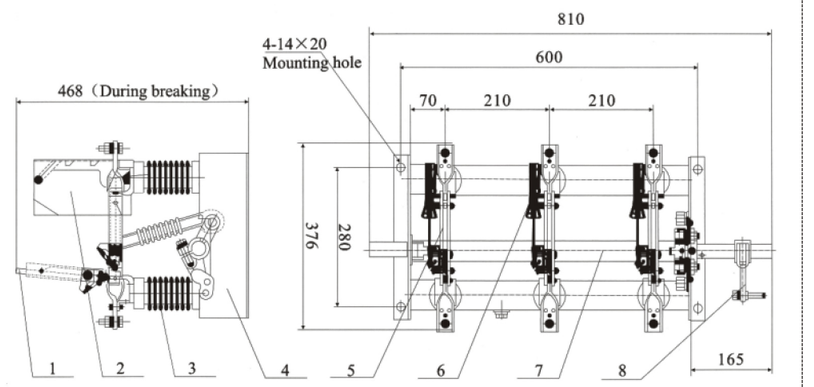
1.3 Fuse rated parameters(Xi'an High-voltage fuse factory)

Model	Rated voltage(kV)	Rated current(A)	Melt's rated current(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

A*: With a striker

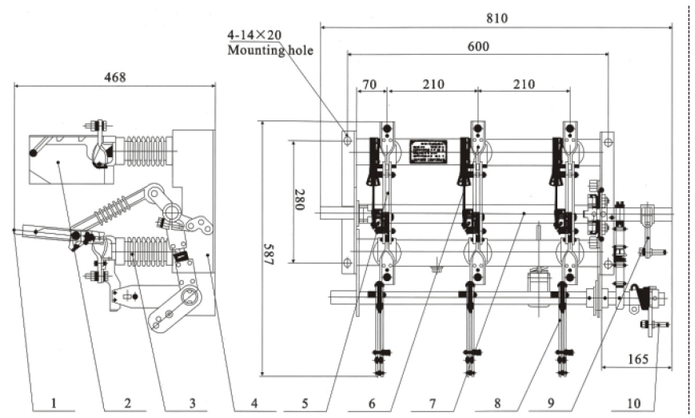
Overall and Installation dimension

Overall dimension of FN7-12 load switch



1. Arc suppression switch 2. Arcing contact and arc suppression chamber
3. Insulator 4. Base 5. Movable contact switch 6. Fixed contact switch
7. Spring energy storage mechanism (in the main shaft sleeve)
8. Master switch making-breaking lever

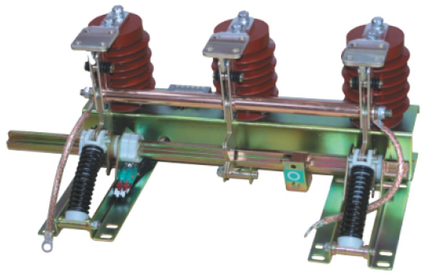
Overall dimension of FN7-12DXL load switch



1. Arc suppression switch 2. Arcing contact and arc suppression chamber 3. Insulator
4. Base 5. Movable contact switch 6. Fixed contact switch
7. Spring energy storage mechanism (in the main shaft sleeve) 8. Earthing switch
9. Master switch making-breaking lever 10. Earthing switch making-breaking lever

JN15-12/24/40.5

Indoor high-voltage alternating-current earthing switch



General

JN15 indoor high-voltage alternating-current earthing switch is used as a support product for indoor three-phase alternating- current power systems of 3 ~ 40.5kV and 50(60)Hz and high- voltage switch cabinets or as an earthing switch for the overhauls of high-voltage electrical equip -ment. It is characterized by simple and compact structure, light weight, flexible operation, easy installation and good thermal stability and dynamic stability.

Product standards

JN15-12/24/40.5KV indoor high-voltage alternating-current earthing switch is produced in line with the following standards and codes.

- GB 1985 High-voltage alternating-current disconnectors and earthing switches
- IEC 62271-102 High-voltage alternating-current disconnectors and earthing switches

Operating conditions

Normal operating conditions

- Ambient temperature: - 40℃~+40℃ (below 35℃ within 24 hours)
- Relative humidity: ≤95% (daily average) or ≤90% (monthly average)
- Altitude: ≤ 1000m

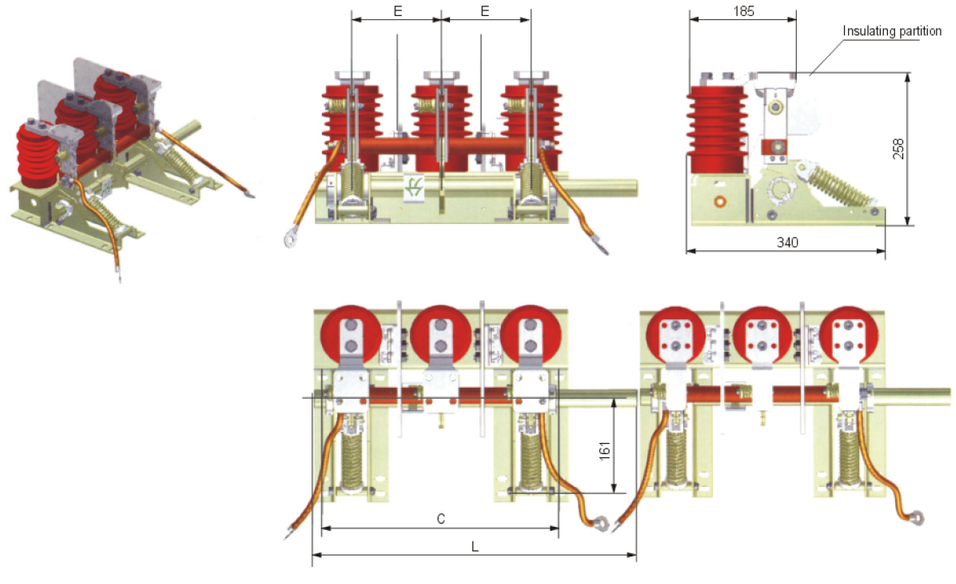
Technical parameters

1.1 Technical parameters

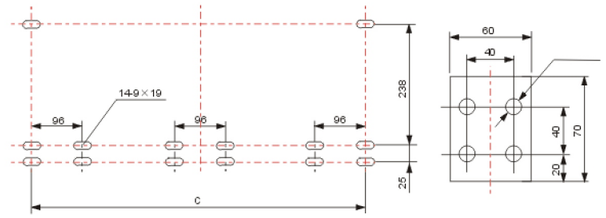
Item		Unit	Reference value
Rated voltage		kV	12/24/40.5
Rated insulation level	Lightning impulse withstand voltage	kV	75,145,185
	1min power-frequency withstand voltage	kV	42,65,95
Rated frequency		Hz	50/60
Rated short-time withstand current		kA	31.5,40
Rated withstand current (peak value)		kA	80,100
Interphase center distance		mm	see the table

Overall and Installation dimension

Overall dimension of JN15-12/T31.5



External dimensions



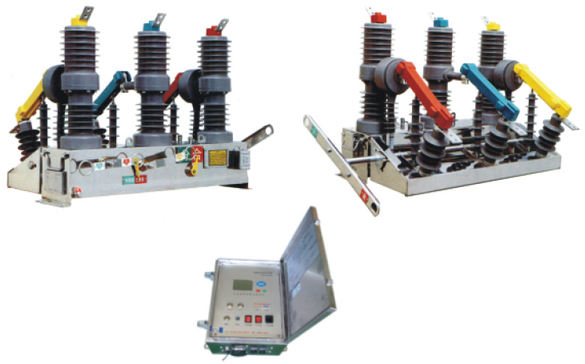
Installation dimensions Connection terminal

Note: There is an insulating partition only when the inter-pole center distance is 150, the other products have no partition.

Model and specification	E	L	C
JN15-12/31.5-150	150	540	396
JN15-12/31.5-210	210	655	516
JN15-12/31.5-230	230	710	556
JN15-12/31.5-250	250	760	596
JN15-12/31.5-275	275	810	646

ZW32-12

Outdoor high-voltage
alternating-current
vacuum circuit breaker



General

ZW32-12 outdoor high-voltage alternating-current vacuum circuit breaker is a new on-pole switchgear of our vacuum circuit breaker series products. Its rated voltage is 12kV. It applies to places with such voltage level, including overhead lines, industrial and mining enterprises, power stations, substations, etc. Under its normal operating conditions and specified technical parameters, it can satisfy the protection requirements of systems connected with the grid in service. It has good performance in short-circuit making and breaking. It is characterized by automatic re-making, stable operation and long electric life.

Product standards

ZW32-12 outdoor high-voltage alternating-current vacuum circuit breaker is produced in line with the following standards and codes.

- IEC 62271-100 High-voltage alternating-current circuit-breakers
- GB/T 11022-2011 Common specifications for high-voltage switchgear and controlgear standards
- GB 1984 High-voltage alternating-current circuit-breakers
- GB 311.1 Insulation co-ordination for high voltage transmission and distribution equipment

Operating conditions

Normal operating conditions

- Ambient temperature: - 40℃~+40℃
- Altitude: ≤2000m
- Relative humidity: ≤95% (daily average) or ≤90% (monthly average)
- Wind speed: ≤34m/s (equivalent to a pressure of 700pa on a cylindrical surface)
- Pollution grade: ≤Ⅳ

Technical parameters

1.1 Technical parameters

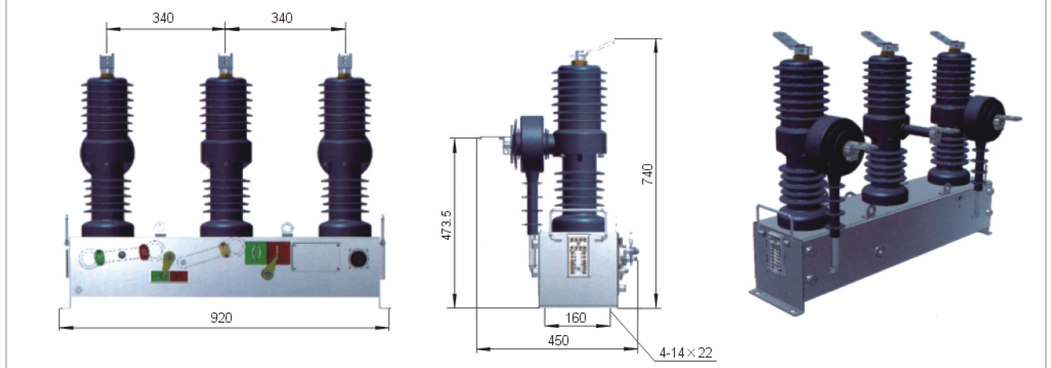
Item		Unit	Reference value
Rated voltage		kV	12
Rated insulation level	Lightning impulse withstand voltage	kV	75
	1min power-frequency withstand voltage	kV	42
Rated frequency		Hz	50/60
Rated current		A	630/1250
Rated short-circuit breaking current		kA	16/20/25
Rated short-circuic making current (peak value)		kA	40/50/63
Rated short-time withstand current		kA	16/20/25
Rated withstand current (peak value)		kA	40/50/63
Rated operation sequence			O-0.3s-CO-180s-CO
Rated short-circuit duration		s	4
Times of making-breaking with the rated short-circuit current		Times	30
Mechanical life			M2 level
Weight		kg	125

1.2 Mechanical parameters

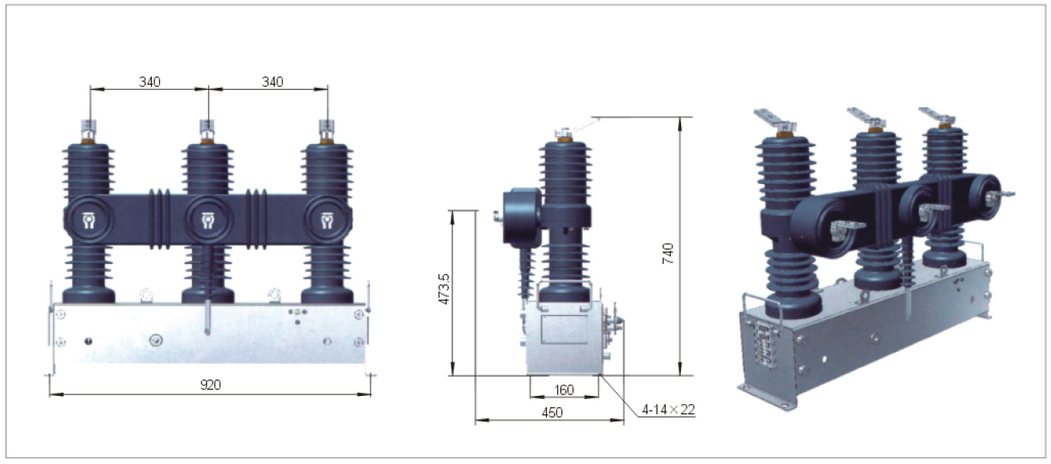
Item	Unit	Reference value
Gap of contacts	mm	9±1
Contact overtravel	mm	2±0.5
Average making speed	m/s	0.6±0.2
Average breaking speed	m/s	1.2±0.2
Bounce time in contact making	ms	≤2
Non-synchronous making/breaking of contact	ms	≤2
Resistance of the circuit of each phase	μΩ	Main switch ≤80 Isolating switch ≤40
Permissible total wear thickness of the moving/fixed contact	mm	3

Overall and Installation dimension

Overall dimension of ZW32-12(with 2CT/3CT)

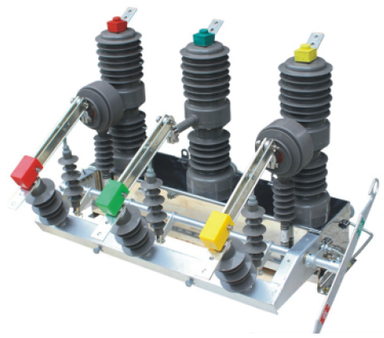


Overall dimension of ZW32-12(with 2CT/3CT-zero sequence)



ZW32M-12

Permanent magnet outdoor high-voltage alternating-current vacuum circuit breaker



General

ZW32M permanent magnet outdoor high-voltage alternating-current vacuum circuit breaker is a new permanent magnet outdoor high-voltage alternating-current switchgear of our vacuum circuit breaker series products. Its rated voltage is 12kV. It applies to places with such voltage level, including overhead lines, industrial and mining enterprises, power stations, substations, etc. Under its normal operating conditions and specified technical parameters, it can satisfy the protection requirements of systems connected with the grid in service. It has good performance in short -circuit making and breaking. It is characterized by automatic re-making, stable operation and long electric life.

Product standards

ZW32M outdoor high-voltage alternating-current vacuum circuit breaker is produced in line with the following standards and codes.

- IEC 62271-100 High-voltage switchgear and controlgear
- GB/T 11022-2011 Common specifications for high-voltage switchgear and controlgear standards
- GB 1984 High-voltage alternating-current circuit-breakers
- GB 311.1 Insulation co-ordination for high voltage transmission and distribution equipment

Operating conditions

Normal operating conditions

- Ambient temperature: - 40℃~+40℃
- Altitude: ≤2000m
- Relative humidity: ≤95% (daily average) or ≤90% (monthly average)
- Wind speed: ≤34m/s (equivalent to a pressure of 700pa on a cylindrical surface)
- Pollution grade: ≤IV

Technical parameters

1.1 Technical parameters

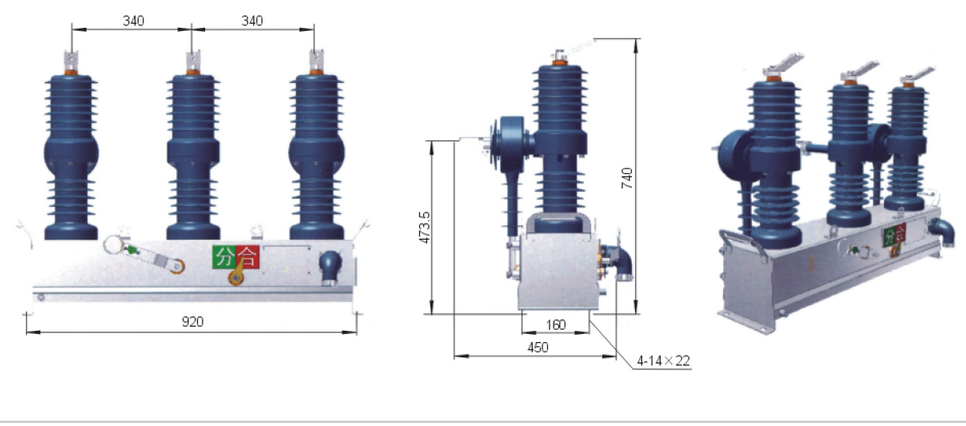
Item		Unit	Reference value
Rated voltage		kV	12
Rated insulation level	Lightning impulse withstand voltage	kV	75
	1min power-frequency withstand voltage	kV	42
Rated frequency		Hz	50/60
Rated current		A	630/1250
Rated short-circuit breaking current		kA	16/20/25
Rated short-circuic making current (peak value)		kA	40/50/63
Rated short-time withstand current		kA	16/20/25
Rated withstand current (peak value)		kA	40/50/63
Rated operation sequence			O-0.3s-CO-180s-CO
Rated short-circuit duration		s	4
Times of making-breaking with the rated short-circuit current		Times	30
Mechanical life			M2 level
Weight		kg	125

1.2 Mechanical parameters

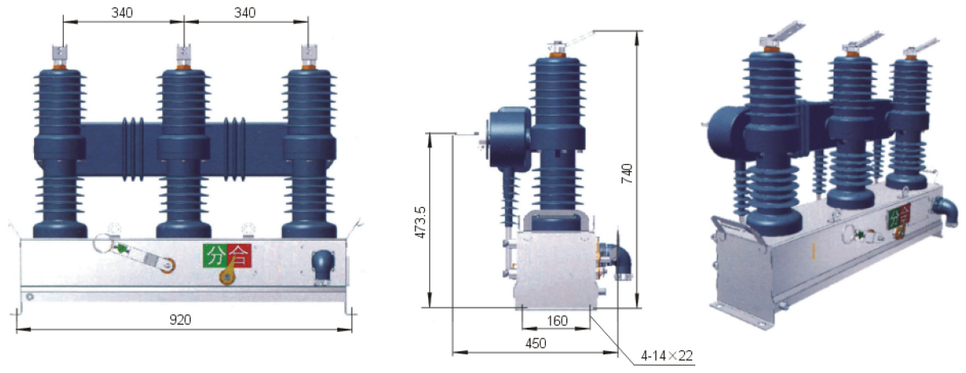
Item	Unit	Reference value
Gap of contacts	mm	9±1
Contact overtravel	mm	2±0.5
Average making speed	m/s	0.6±0.2
Average breaking speed	m/s	1.2±0.2
Bounce time in contact making	ms	≤2
Non-synchronous making/breaking of contact	ms	≤2
Resistance of the circuit of each phase	μΩ	Main switch ≤80 Isolating switch ≤40
Permissible total wear thickness of the moving/fixed contact	mm	3

Overall and Installation dimension

Overall dimension of ZW32M-12(with 2CT/3CT)



Overall dimension of ZW32M-12(with 2CT/3CT-zero sequence)



ZW32-40.5

Outdoor high-voltage
alternating-current
vacuum circuit breaker

◆ General

ZW32-40.5 outdoor high-voltage alternating-current vacuum circuit breaker is a new outdoor high-voltage alternating-current switchgear of our vacuum circuit breaker series. Its rated voltage is 40.5kV. It applies to places with such voltage level, including overhead lines, industrial and mining enterprises, power stations, substations, etc. Under its normal operating conditions and specified technical parameters, it can satisfy the system protection requirements of the grid. It is characterized by automatic re-making, stable operation and long electric life.

◆ Product standards

ZW32-40.5 outdoor high-voltage alternating-current vacuum circuit breaker is produced in line with the following standards and codes.

- IEC 62271-100 High-voltage switchgear and controlgear
- GB/T 11022-2011 Common specifications for high-voltage switchgear and controlgear standards
- GB 1984 High-voltage alternating-current circuit-breakers
- GB 311.1 Insulation co-ordination for high voltage transmission and distribution equipment

◆ Operating conditions

Normal operating conditions

- Ambient temperature: - 40℃~+40℃
- Altitude: ≤2000m
- Relative humidity: ≤95% (daily average) or ≤90% (monthly average)
- Wind speed: ≤34m/s (equivalent to a pressure of 700pa on a cylindrical surface)
- Pollution grade: ≤IV

◆ Technical parameters

1.1 Technical parameters

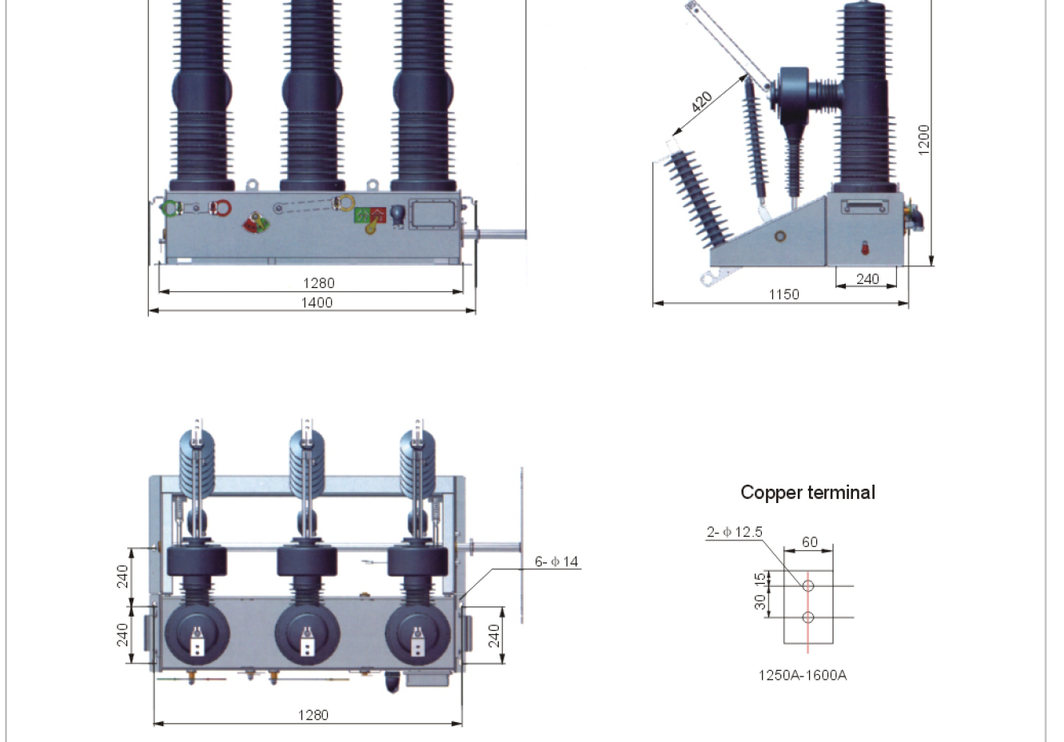
Item		Unit	Reference value
Rated voltage		kV	40.5
Rated insulation level	Lightning impulse withstand voltage	kV	185
	1min power-frequency withstand voltage	kV	95
Rated frequency		Hz	50/60
Rated current		A	630/1250/1600/2000/2500
Rated short-circuit breaking current		kA	20/25/31.5
Rated short-circuic making current (peak value)		kA	50/63/80
Rated short-time withstand current		kA	20/25/31.5
Rated withstand current (peak value)		kA	50/63/80
Rated operation sequence			O-0.3s-CO-180s-CO
Rated short-circuit duration		s	4
Times of making-breaking with the rated short-circuit current		Times	30
Mechanical life			M2 level
Weight		kg	280

1.2 Mechanical parameters

Item	Unit	Reference value
Gap of contacts	mm	18±1
Contact overtravel	mm	4±1
Average making speed	m/s	0.6±0.2
Average breaking speed	m/s	1.2±0.2
Bounce time in contact making	ms	≤3
Non-synchronous making/breaking of contact	ms	≤2
Resistance of the circuit of each phase	μΩ	Main switch ≤100 Isolating switch ≤60
Permissible total wear thickness of the moving/fixed contact	mm	3

◆ Overall and Installation dimension

Overall dimension of ZW32-40.5G (with 2CT) with an isolating switch



ZW32M-40.5

Permanent magnet outdoor high-voltage alternating-current vacuum circuit breaker

◆ General

ZW32M-40.5 permanent magnet outdoor high-voltage alternating- current vacuum circuit breaker is a new permanent magnet outdoor high -voltage alternating-current switchgear of our vacuum circuit breaker series products. Its rated voltage is 40.5kV. It applies to places with such voltage level, including overhead lines, industrial and mining enterprises, power stations, substations, etc. Under its normal operating conditions and specified technical parameters, it can satisfy the protection requirements of systems connected with the grid in service. It has good performance in short-circuit making and breaking. It is characterized by automatic re-making, stable operation and long electric life.

◆ Product standards

ZW32-40.5 outdoor high-voltage alternating-current vacuum circuit breaker is produced in line with the following standards and codes.

- IEC 62271-100 High-voltage switchgear and controlgear
- GB/T 11022-2011 Common specifications for high-voltage switchgear and controlgear standards
- GB 1984 High-voltage alternating-current circuit-breakers
- GB 311.1 Insulation co-ordination for high voltage transmission and distribution equipment

◆ Operating conditions

Normal operating conditions

- Ambient temperature: - 40℃~+40℃
- Altitude: ≤2000m
- Relative humidity: ≤95% (daily average) or ≤90% (monthly average)
- Wind speed: ≤34m/s (equivalent to a pressure of 700pa on a cylindrical surface)
- Pollution grade: ≤IV

◆ Technical parameters

1.1 Technical parameters

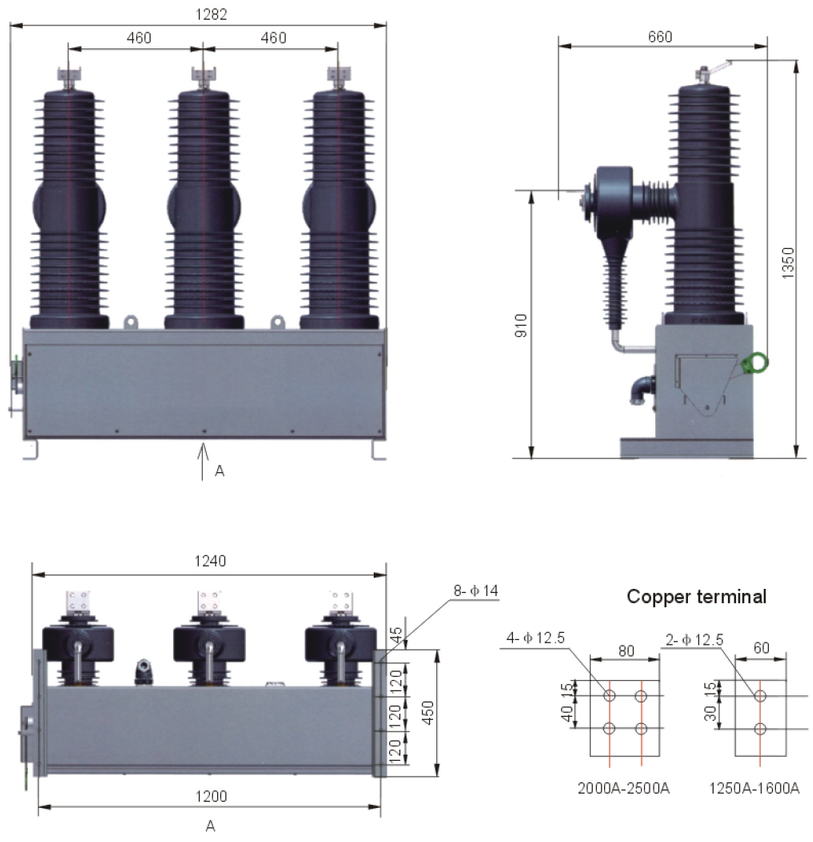
Item		Unit	Reference value
Rated voltage		kV	40.5
Rated insulation level	Lightning impulse withstand voltage	kV	185
	1min power-frequency withstand voltage	kV	95
Rated frequency		Hz	50/60
Rated current		A	630/1250/1600/2000/2500
Rated short-circuit breaking current		kA	20/25/31.5
Rated short-circuic making current (peak value)		kA	50/63/80
Rated short-time withstand current		kA	20/25/31.5
Rated withstand current (peak value)		kA	50/63/80
Rated operation sequence			O-0.3s-CO-180s-CO
Rated short-circuit duration		s	4
Times of making-breaking with the rated short-circuit current		Times	30
Mechanical life			M2 level
Weight		kg	280

1.2 Mechanical parameters

Item	Unit	Reference value
Gap of contacts	mm	17±1
Contact overtravel	mm	4±1
Average making speed	m/s	0.6±0.2
Average breaking speed	m/s	1.2±0.2
Bounce time in contact making	ms	≤3
Non-synchronous making/breaking of contact	ms	≤2
Resistance of the circuit of each phase	μΩ	Main switch ≤100 Isolating switch ≤60
Permissible total wear thickness of the moving/fixed contact	mm	3

◆ Overall and Installation dimension

Overall dimension of ZW32M-40.5



ZW32A-15.5/27/38

Outdoor high-voltage
alternating-current
vacuum circuit breaker

General

ZW32A-15.5/27/38 outdoor high-voltage alternating-current vacuum circuit breaker is a new high-voltage alternating-current switchgear of our vacuum circuit breaker series products. Its rated voltage is 15.5/27/38kV. It applies to places with such voltage level, including overhead lines, industrial and mining enterprises, power stations, substations, etc. Under its normal operating conditions and specified technical parameters, it can satisfy the protection requirements of systems connected with the grid in service. It has good performance in short-circuit making and breaking. It is characterized by automatic re-making, stable operation and long electric life.

Product standards

ZW32A-15.5/27/38 outdoor high-voltage alternating-current vacuum circuit breaker is produced in line with the following standards and codes.

- IEC 62271-100 High-voltage alternating-current circuit-breakers
- GB/T 11022-2011 Common specifications for high-voltage switchgear and controlgear standards
- GB 1984 High-voltage alternating-current circuit-breakers
- GB 311.1 Insulation co-ordination for high voltage transmission and distribution equipment

Operating conditions

Normal operating conditions

- Ambient temperature: - 40℃~+40℃
- Altitude: ≤2000m
- Relative humidity: ≤95% (daily average) or ≤90% (monthly average)
- Wind speed: ≤34m/s (equivalent to a pressure of 700pa on a cylindrical surface)
- Pollution grade: ≤Ⅳ

Technical parameters

1.1 Technical parameters

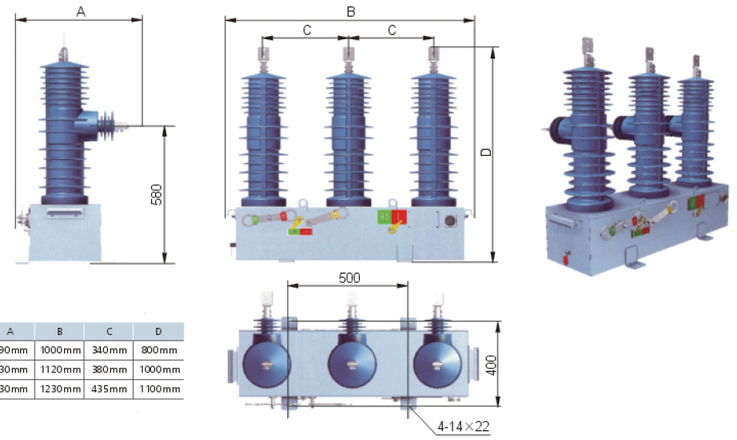
Item		Unit	Reference value		
Rated voltage		kV	15.5	27	38
Rated insulation level	Lightning impulse withstand voltage	kV	110	150	170
	1min power-frequency withstand voltage	kV	50	60	70
Rated frequency		Hz	50/60		
Rated current		A	630/1250		
Rated short-circuit breaking current		kA	20/25		
Rated short-circuic making current (peak value)		kA	50/63		
Rated short-time withstand current		kA	20/25		
Rated withstand current (peak value)		kA	50/63		
Rated operation sequence			O-0.3s-CO-180s-CO		
Rated short-circuit duration		s	4		
Times of making-breaking with the rated short-circuit current		Times	30		
Mechanical life			M2 level		
Weight		kg	125/148		

1.2 Mechanical parameters

Item	Unit	Reference value
Gap of contacts	mm	14±1
Contact overtravel	mm	4±1
Average making speed	m/s	0.6±0.2
Average breaking speed	m/s	1.2±0.2
Bounce time in contact making	ms	≤3
Non-synchronous making/breaking of contact	ms	≤2
Resistance of the circuit of each phase	μΩ	Main switch≤100
Permissible total wear thickness of the moving/fixed contact	mm	3

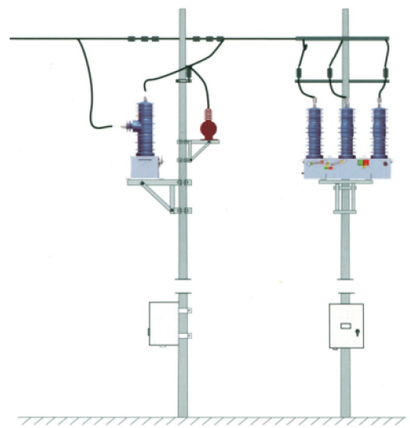
Overall and Installation dimension

Overall dimension of ZW32A-15.5/27/38(with CT)



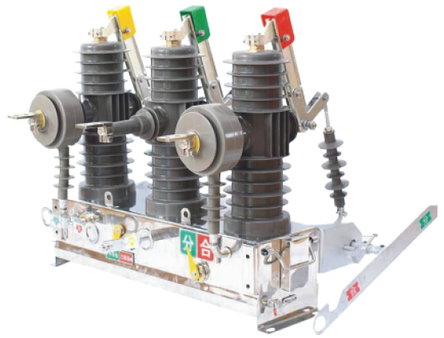
Rated voltage	A	B	C	D
15.5kV	490mm	1000mm	340mm	800mm
27kV	530mm	1120mm	380mm	1000mm
38kV	630mm	1230mm	435mm	1100mm

Overall dimension of ZW32A-15.5/27/38(with CT) on one post



ZW43-12

Outdoor high-voltage
alternating-current
vacuum circuit breaker



◆ General

ZW43-12 outdoor high-voltage alternating-current vacuum circuit breaker is a new outdoor high-voltage alternating-current vacuum circuit breaker of our vacuum circuit breaker series products. Its rated voltage is 12kV. It applies to places with such voltage level, including overhead lines, industrial and mining enterprises, power stations, substations, etc. Under its normal operating conditions and specified technical parameters, it can satisfy the protection requirements of systems connected with the grid in service. It has good performance in short-circuit making and breaking. It is characterized by automatic re-making, stable operation and long electric life.

◆ Product standards

ZW43-12 outdoor high-voltage alternating-current vacuum circuit breaker is produced in line with the following standards and codes.

- IEC 62271-100 High-voltage alternating-current circuit-breakers
- GB/T 11022-2011 Common specifications for high-voltage switchgear and controlgear standards
- GB 1984 High-voltage alternating-current circuit-breakers
- GB 311.1 Insulation co-ordination for high voltage transmission and distribution equipment

◆ Operating conditions

Normal operating conditions

- Ambient temperature: - 40℃~+40℃
- Altitude: ≤2000m
- Relative humidity: ≤95% (daily average) or ≤90% (monthly average)
- Wind speed: ≤34m/s (equivalent to a pressure of 700pa on a cylindrical surface)
- Pollution grade: ≤IV

◆ Technical parameters

1.1 Technical parameters

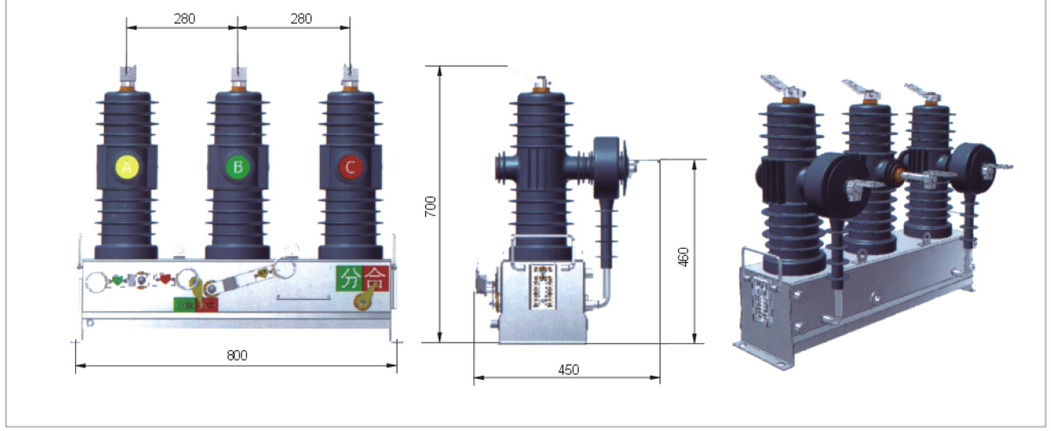
Item		Unit	Reference value
Rated voltage		kV	12
Rated insulation level	Lightning impulse withstand voltage	kV	75
	1min power-frequency withstand voltage	kV	42
Rated frequency		Hz	50/60
Rated current		A	630/1250
Rated short-circuit breaking current		kA	16/20/25
Rated short-circuic making current (peak value)		kA	40/50/63
Rated short-time withstand current		kA	16/20/25
Rated withstand current (peak value)		kA	40/50/63
Rated operation sequence			O-0.3s-CO-180s-CO
Rated short-circuit duration		s	4
Times of making-breaking with the rated short-circuit current		Times	30
Mechanical life			M2 level
Weight		kg	110

1.2 Mechanical parameters

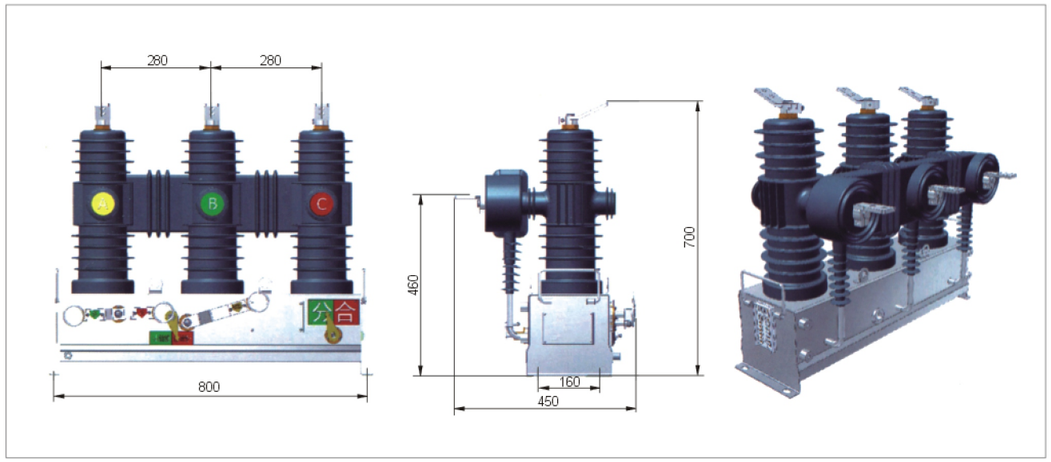
Item	Unit	Reference value
Gap of contacts	mm	9±1
Contact overtravel	mm	2±0.5
Average making speed	m/s	0.6±0.2
Average breaking speed	m/s	1.2±0.2
Bounce time in contact making	ms	≤2
Non-synchronous making/breaking of contact	ms	≤2
Resistance of the circuit of each phase	μΩ	Main switch≤80 Isolating switch≤40
Permissible total wear thickness of the moving/fixed contact	mm	3

◆ Overall and Installation dimension

Overall dimension of ZW43-12(with 2CT/3CT)



Overall dimension of ZW43-12(with 2CT/3CT+zero sequence)



ZW20A-12

Outdoor high-voltage
alternating-current
vacuum circuit breaker

◆ General

ZW20A-12 outdoor high-voltage alternating-current vacuum circuit breaker is a new outdoor high-voltage alternating-current vacuum circuit breaker of our vacuum circuit breaker series products. Its rated voltage is 12kV. It applies to places with such voltage level, including overhead lines, industrial and mining enterprises, power stations, substations, etc. In normal operating conditions and specified technical parameters, it can satisfy the protection requirements of systems connected with the grid in service. It has good performance in short-circuit making and breaking. It is characterized by automatic re-making, stable operation and long electric life.

◆ Product standards

ZW20A-12 outdoor high-voltage alternating-current vacuum circuit breaker is produced in line with the following standards and codes.

- IEC 62271-100 High-voltage alternating-current circuit-breakers
- GB/T 11022-2011 Common specifications for high-voltage switchgear and controlgear standards
- GB 1984 High-voltage alternating-current circuit-breakers
- GB 311.1 Insulation co-ordination for high voltage transmission and distribution equipment

◆ Operating conditions

Normal operating conditions

- Ambient temperature: - 40℃~+40℃
- Altitude: ≤2000m
- Relative humidity: ≤95% (daily average) or ≤90% (monthly average)
- Wind speed: ≤34m/s (equivalent to a pressure of 700pa on a cylindrical surface)
- Pollution grade: ≤IV

◆ Technical parameters

1.1 Technical parameters

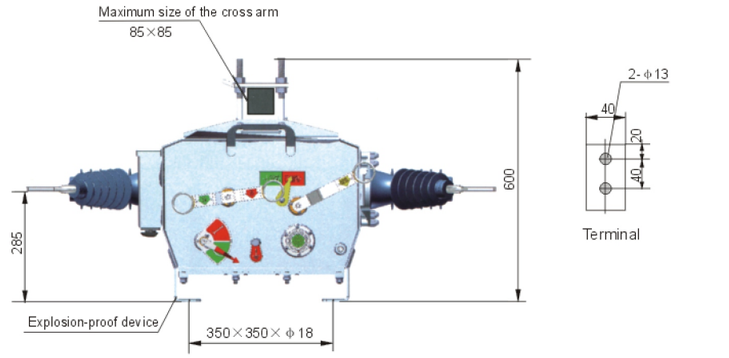
Item		Unit	Reference value
Rated voltage		kV	12
Rated insulation level	Lightning impulse withstand voltage	kV	75
	1min power-frequency withstand voltage	kV	42
Rated frequency		Hz	50/60
Rated current		A	630/1250
Rated short-circuit breaking current		kA	16/20/25
Rated short-circuic making current (peak value)		kA	40/50/63
Rated short-time withstand current		kA	16/20/25
Rated withstand current (peak value)		kA	40/50/63
Rated operation sequence			O-0.3s-CO-180s-CO
Rated short-circuit duration		s	4
Times of making-breaking with the rated short-circuit current		Times	30
Mechanical life			M2 level
Weight		kg	145

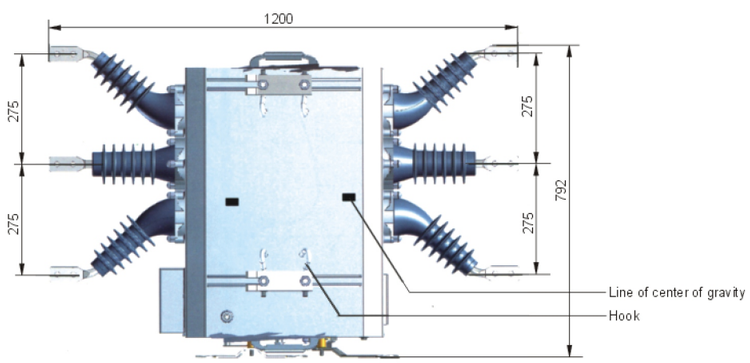
1.2 Mechanical parameters

Item	Unit	Reference value
Gap of contacts	mm	9±1
Contact overtravel	mm	3±1
Average making speed	m/s	0.6±0.2
Average breaking speed	m/s	1.2±0.2
Bounce time in contact making	ms	≤2
Non-synchronous making/breaking of contact	ms	≤2
Resistance of the circuit of each phase	μΩ	Main switch≤200 Isolating switch≤50
Permissible total wear thickness of the moving/fixed contact	mm	3

◆ Overall and Installation dimension

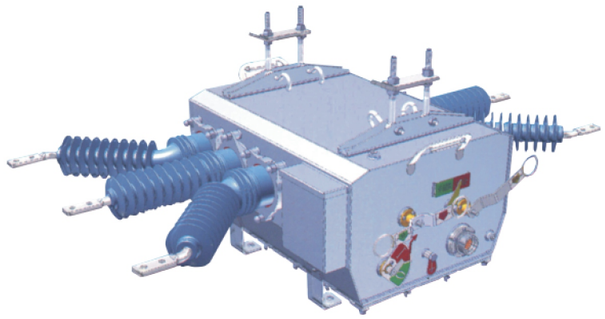
Overall dimension of insulating bushing outgoing lines of ZW20A circuit breaker





ZW20A-24

Outdoor high-voltage
alternating-current
vacuum circuit breaker



◆ General

ZW20A-24 outdoor high-voltage alternating-current vacuum circuit breaker is a new outdoor high-voltage alternating-current vacuum circuit breaker of our vacuum circuit breaker series products. Its rated voltage is 24kV. It applies to places with such voltage level, including overhead lines, industrial and mining enterprises, power stations, substations, etc. In normal operating conditions and specified technical parameters, it can satisfy the protection requirements of systems connected with the grid in service. It has good performance in short-circuit making and breaking. It is characterized by automatic re-making, stable operation and long electric life.

◆ Product standards

ZW20A-24 outdoor high-voltage alternating-current vacuum circuit breaker is produced in line with the following standards and codes.

- IEC 62271-100 High-voltage alternating-current circuit-breakers
- GB/T 11022-2011 Common specifications for high-voltage switchgear and controlgear standards
- GB 1984 High-voltage alternating-current circuit-breakers
- GB 311.1 Insulation co-ordination for high voltage transmission and distribution equipment

◆ Operating conditions

Normal operating conditions

- Ambient temperature: - 40℃~+40℃
- Altitude: ≤2000m
- Relative humidity: ≤95% (daily average) or ≤90% (monthly average)
- Wind speed: ≤34m/s (equivalent to a pressure of 700pa on a cylindrical surface)
- Pollution grade: ≤IV

◆ Technical parameters

1.1 Technical parameters

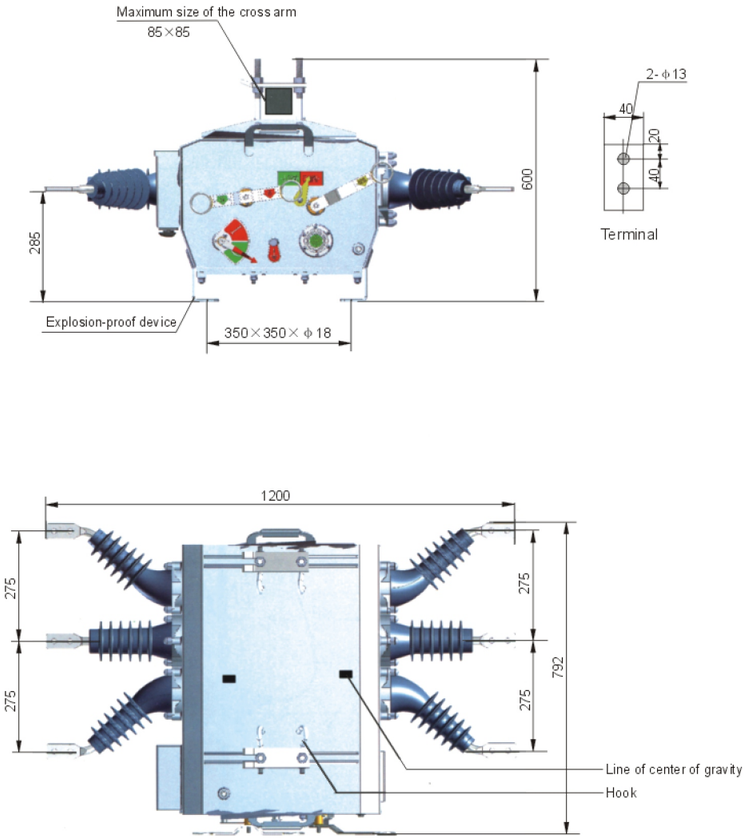
Item		Unit	Reference value
Rated voltage		kV	24
Rated insulation level	Lightning impulse withstand voltage	kV	145
	1min power-frequency withstand voltage	kV	65
Rated frequency		Hz	50/60
Rated current		A	630/1250
Rated short-circuit breaking current		kA	16/20/25
Rated short-circuic making current (peak value)		kA	40/50/63
Rated short-time withstand current		kA	16/20/25
Rated withstand current (peak value)		kA	40/50/63
Rated operation sequence			O-0.3s-CO-180s-CO
Rated short-circuit duration		s	4
Times of making-breaking with the rated short-circuit current		Times	30
Mechanical life			M2 level
Weight		kg	165

1.2 Mechanical parameters

Item	Unit	Reference value
Gap of contacts	mm	12±1
Contact overtravel	mm	3±1
Average making speed	m/s	0.6±0.2
Average breaking speed	m/s	1.2±0.2
Bounce time in contact making	ms	≤2
Non-synchronous making/breaking of contact	ms	≤2
Resistance of the circuit of each phase	μΩ	Main switch≤200 Isolating switch≤60
Permissible total wear thickness of the moving/fixed contact	mm	3

◆ Overall and Installation dimension

Overall dimension of insulating bushing outgoing lines of ZW20A circuit breaker



ZW7-40.5

Outdoor High-voltage
Vacuum Circuit Breaker

General

ZW7-40.5 series outdoor high voltage vacuum circuit breakers main switchgear of AC50Hz, 40.5kV, which is assembled with spring operating or electromagnetic operating mechanism. It can be operated to switch on/off by remote control, and it is also charged and switched on/off by hand. It is mainly used in outdoor 35kV distribution system to control and protect, also for normal operating and protecting short circuit of urban, rural network, or industrial enterprises. Its overall structure is supported by porcelain insulator, vacuum interrupter built in upper insulator, down -side insulator used for supporting. The breaker applies frequent operating places with the advantages of good sealing anti-aging, high-voltage withstand, non flame, non explosion long working life, easy installation and maintenance and etc.

Product feature

- For frequent operation place
- Good sealing, anti-aging, high pressure, no burning, no explosion, long life, convenient installation and maintenance features
- Support SCADA

Operating conditions

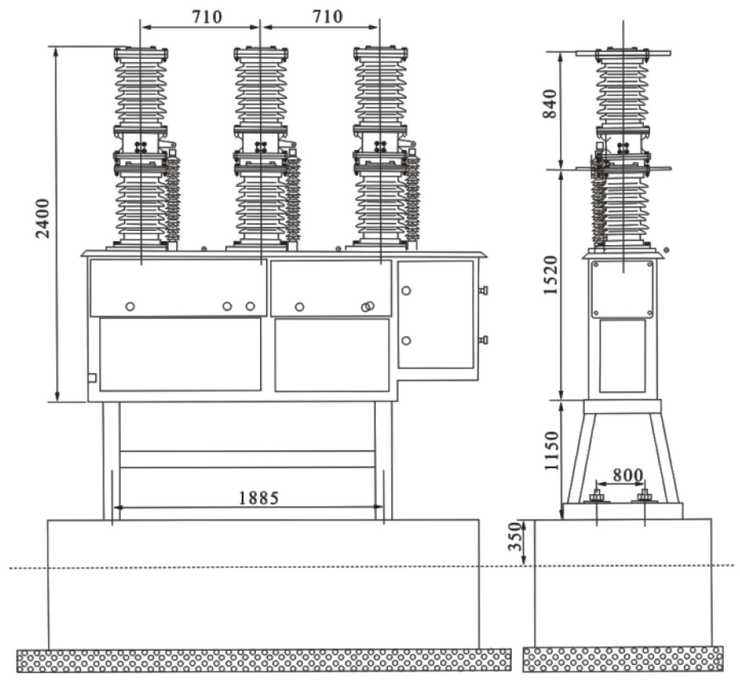
- Altitude: not exceed 1000m.
- Ambient temperature: not higher than +50℃,not less than - 55℃.
- Relative humidity: daily average relative humidity: ⩽95%; monthly average relative humidity : ⩽95%; monthly average relative humidity ⩽90%, daily average saturated vapor pressure ⩽2.2KPa; monthly average value: ⩽1.8KPa.
- Earthquake intensity: ⩽8 degree.
- The installation should be free from fire, explosion, severe vibration, chemical corrosion and serious pollution.

Technical parameters

Item			Unit	Reference value
Rated voltage			kV	35
Maximum system voltage			kV	40.5
Rated insulation level	1min withstand voltage	Dry	kV	95
		Wet	kV	80
	Lightning impulse withstand voltage(peak)		kV	190
Rated current			A	630/1,250/1600/2000/2500
Rated short circuit breaking current			kA	20/25/31.5
Rated operating sequence				OC-0.3s-CO-180S-CO
Rated short-circuit opening times			kA	20/25/31.5
Rated capacitor group breaking current			A	400
Rated short circuit closing current(peak)			kA	50
Rated peak withstand current			kA	50
Rated short-circuit withstand current			kA	20
Rated short-circuit continuing time			s	4

Item	Unit	Reference value
Current transformer ratio		75/5A;100/5A;150/5A
Average breaker speed	m/s	1.5±0.2
Average closing speed	m/s	0.7±0.2
The jump time of contact close breaker	ms	⩽2
Time difference of closing(breaking) three phase at the same time	ms	⩽2
Closing time	ms	⩽150
Opening time	ms	⩽60
Mechanical life	times	10000
Rated operating voltage and aux circuit rated voltage	V	DC110/220
		AC110/220
DC resistance of circuit for every phase	S	⩽100
Contacts limit erosion	A	3
Weight	kg	10000

Overall and Installation dimension



ZW7A-40.5-PB

Outdoor high-voltage
alternating-current
vacuum circuit breaker

General

ZW7A-40.5 outdoor high-voltage alternating-current vacuum circuit breaker is designed for outdoor power transmission with frequency of 50Hz and a rated voltage of 40.5kV. It is applicable to the electrical equipment control and protection in industrial and mining enterprises, power plants and substations, particularly to the places needing frequent operation.

With stable performance and convenient installation, the product is the best choice for the control and protection of high-voltage power transmission and distribution systems.

Product standards

ZW7A-40.5 outdoor high-voltage alternating-current vacuum circuit breaker is produced in line with the following standards and codes.

- IEC 62271-100 High-voltage alternating-current circuit-breakers
- GB/T 11022-2011 Common specifications for high-voltage switchgear and controlgear standards
- GB 1984 High-voltage alternating-current circuit-breakers
- GB 311.1 Insulation co-ordination for high voltage transmission and distribution equipment

Operating conditions

Normal operating conditions

- Ambient temperature: - 40℃~+40℃
- Altitude: ≤2000m
- Relative humidity: ≤95% (daily average) or ≤90% (monthly average)
- Wind speed: ≤34m/s (equivalent to a pressure of 700pa on a cylindrical surface)
- Pollution grade: ≤IV

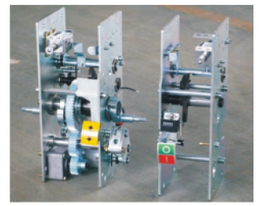
Technical parameters

Item		Unit	Reference value
Rated voltage		kV	40.5
Rated insulation level	Lightning impulse withstand voltage	kV	185
	1min power-frequency withstand voltage	kV	95
Rated frequency		Hz	50/60
Rated current		A	1250/1600/2000/2500
Rated short-circuit breaking current		kA	20/25/31.5
Rated short-circuic making current (peak value)		kA	50,63,80
Rated short-time withstand current		kA	20/25/31.5
Rated withstand current (peak value)		kA	50,63,80
Rated operation sequence			O-0.3s-CO-180s-CO
Rated short-circuit duration		s	4
Times of making-breaking with the rated short-circuit current		Times	30
Mechanical life			M2 level
Weight		kg	1000

VBI-40.5 actuator

Standard making module and breaking module

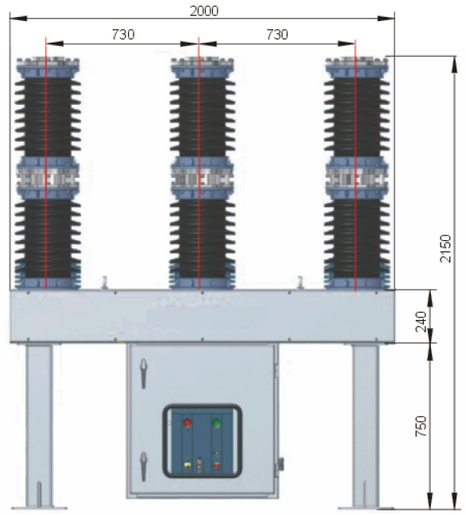
As a feature of the product, the modular spring actuator includes a making module and a breaking module and is characterized by convenient replacement and maintenance and quick power-off overhauls. The two modules used as spare parts have been lubricated by special lubricant and adjusted and have a long service period, so it is not necessary to adjust the actuator after replacement of either the modules (the open-circuit dynamic characteristic will remain unchanged), minimizing the maintenance and overhaul time. Even if these two modules fail, they can serve as spare parts continually after being repaired and maintained by their manufacturer.

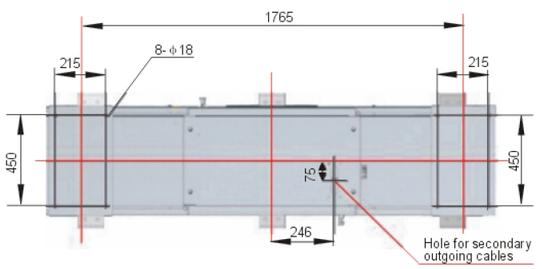


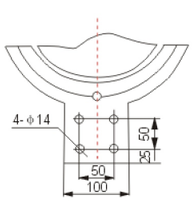
Making module Breaking module

Overall and Installation dimension

Overall dimension of ZW7A-40.5 outdoor high-voltage alternating-current vacuum circuit breaker (with external CT)





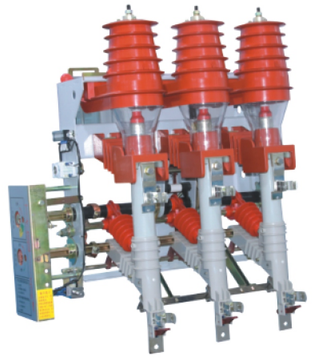


Drawing of Aluminum Upper and Lower Outgoing Cable Terminals

Altitude: 1000-2000m

FN12/FZN-12kV

Air pressure load break switch



General

FN12-12D and FN12-12DR series switch-fuse combinations is a three-phase high voltage switchgear with rated voltage of 12kV and rated frequency of 50Hz, and it's mainly used to make and break the load current, closed-loop current, no-load transformer and cable charging current, and also close short circuit current. The combination can break short-circuit current, and load break switch with earth switch can bear short circuit current. It's used for load control and short circuit protection for substations of three-phase ring network or urban buildings and industrial and mining enterprises.

Product standards

- GB311.1-1997 Insulation Co-ordination for High Voltage Transmission and Distribution Equipment
- GB3804-2004 High-voltage Alternating-current Switches for Rated Voltage above 3.6kV and less than 40.5kV
- GB/T 11022-1999 Common Specifications for High-voltage Switchgear and Controlgear Standards
- DL/T593-2006 Common Specifications for High-voltage Switchgear and Controlgear Standards
- GB16926-2009 High-voltage Alternating Current Switch-Fuse Combinations
- GB/T 1985-2004 High-voltage Alternating-current Disconnectors and Earthing Switches
- GB/T 15166 -94 High-voltage Alternating-current Fuses

Operating conditions

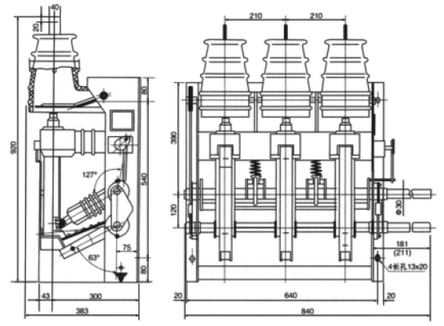
- Ambient air temperature Limit +40℃; Lower -25℃;
- Above sea level1000m;
- Relative humidity: daily average is less than 95%, on average less than 90%;
- Seismic intensity of not more than 8 degrees;
- No fire, explosion, chemical corrosion and severe vibration in the workplace;
- Contamination level: II.

Technical parameters

1.1 Technical parameters

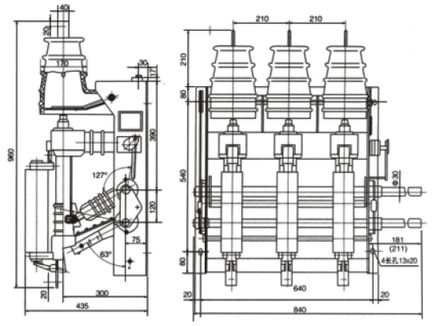
Item	Unit	FN12-12/630	FNR12-12/100-31.5
Rated voltage	kV	12	
Rated frequency	Hz	50	
Rated current	A	630	125
Lightning impulse withstand voltage	kV	75/85	
1min power frequency withstand voltage	kV	42/48	
Rated heat-stable current	kA	20(4S)	
Rated current of dynamic stability	kA	50	50
Rated short close current(Max)	kA	50	31.5
Rated short-circuit breaking current	kA		
No-load transformer breaking capacity	kVA	1250	
Rated cable charging current	A	10	
Earthing switch heat-stable current	kA	20(2S)	
Earthing switch current dynamic stability	kA	50	
Power supply voltage		AC/DC110 AC/DC220	

Overall and Installation dimension



Note: the user's special requirement for the spindle end with a diameter of 10 holes is 870mm.

Shape diagram of FKN12–12 type indoor high voltage AC load switch



Note: the user's special requirement for the spindle end with a diameter of 10 holes is 870mm.

Load switch – fuse combiner electrical appliance's structure, overall and installation dimension diagram

FKN12A-12D

Indoor high voltage
load break switch

General

FKN12A-12DCompressed air load switch, FKRN12A-12D series of compressed air load switch - fuse for 12kV and below three-phase power distribution system, as transformers, cables, overhead lines and other electrical equipment, control and protection purposes; especially suitable for urban and rural power network terminal substation and box-model substation. And applies to ring, dual power supply unit of radiation control and protection.

FKN12A-12DSeries pressuring gas division and the load current load switch and overload currents.

FKRN12A-12D series of compressed air load switch - fuse to division and load current, overload current, short-circuit breaking current.

Product standards

- GB311.1-1997 Insulation Co-ordination for High Voltage Transmission and Distribution Equipment
- GB3804-2004 High-voltage Alternating-current Switches for Rated Voltage above 3.6kV and less than 40.5kV
- GB/T 11022-1999 Common Specifications for High-voltage Switchgear and Controlgear Standards
- DL/T593-2006 Common Specifications for High-voltage Switchgear and Controlgear Standards
- GB16926-2009 High-voltage Alternating Current Switch-Fuse Combinations
- GB/T 1985-2004 High-voltage Alternating-current Disconnectors and Earthing Switches
- GB/T 15166 -94 High-voltage Alternating-current Fuses

Operating conditions

- Ambient air temperature Limit +40℃; Lower -25℃;
- Above sea level1000m;
- Relative humidity: daily average is less than 95%, on average less than 90%;
- Seismic intensity of not more than 8 degrees;
- No fire, explosion, chemical corrosion and severe vibration in the workplace;
- Contamination level: II.

Structural characteristics

Load switch, grounding switch, fuse and institutions in a framework, it can be flexibly combined, compact structure, small size and ease of installing; Fracture for the direct-acting Model layout, dynamic and thermal parameters of high current, one-time to complete the operation; Static contact with insulation cover, so that the structure of ring counters implemented in isolation, eliminating the white insulated partition, fracture insulation flapper to prevent cabinet arc short circuit;

The valve has a unique structure, the load switches gate, the door automatically isolate the fracture, protective and good;

Load switches and earthing switches, fuses reliable mechanical lock between the devices meet the "Five Anti" requirements;

With manual operation and the operation of AC and DC electric power operations in two forms, easy to implement power system of the "three remote" requirements.

Technical parameters

1.1 Technical parameters

Item		Unit	FKN12A-12D	FKRN12A-12D
Rated voltage		kV	12	12
Rated frequency		Hz	50	50
Rated current		A	630	125
Rated short time power frequency voltage tolerance(1min)	Phase to earth, phase to phase	kV	42	42
	Across open contacts	kV	48	48
Rated lightning impulse voltage tolerance	Phase to earth, phase to phase	kV	75	75
	Across open contacts	kV	85	85
Rated short time withstand current(thermal steadily)	Load switch	kA	20	
	Earthing switch	kA	20	
Rated short circuit duration(thermal steady time)	Load switch	S	4	
	Earthing switch	S	2	
Rated short circuit closing current(peak)		kA	50	
Rated breaking current	Active load	kA	630	
	Closed loop	kA	630	
	5% active load	kA	31.5	
	Cable charging	kA	10	
	Breaking load transformer	kVA	1250	

1.2 Mechanical parameters

Item	Unit	Reference value
Distance of open contacts	mm	≥175
Middle distance of poles	mm	210±2
Air clearance of poles	mm	≥125
Travel	mm	210±4
Over-travle	mm	≥40
Three pole making asynchronous	ms	≤10
Three pole breaking asynchronous	ms	≤5
Release tripper breaking time	ms	40~65
Main circuit resistance	μΩ	≤130

Overall and Installation dimension

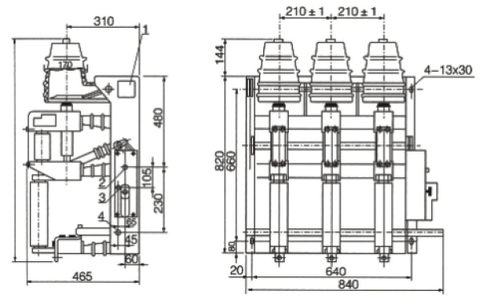


Fig.1 Overall and installation dimension diagram of load switch and combinatorial electrical apparatus(without panel)

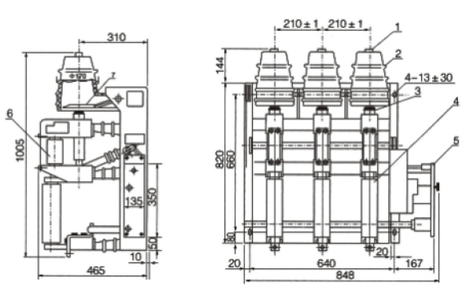
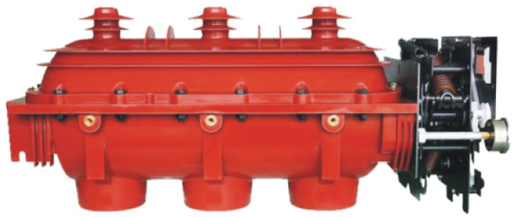


Fig.2 Overall and installation dimension diagram of load switch and combinatorial electrical apparatus(with panel)

1–Nameplate 2– Energy storage shaft 3–Release 4–Grounding cutter shaft

FLN12A-12D

Indoor high voltage AC
load break switch



General

FLN type indoor high voltage AC load breaker switch refer to international new technology and develop the switching equipment in according to the relevant standards in China's electric power system. Its performance indicators in full compliance IEC420, 694,129 and national standards GB3804-2004 "3.6kV-0.5kV high voltage AC load breaker switch" GB1985-2004 "high-voltage AC isolation switch and earthing switch", GB/T11022-1999 "common technical requirements for high-voltage switchgear and control equipment standards". This is the main switching element RMU. The load breaker switch is a collection multifunctional medium voltage switchgear of gates, sub-gate, earthing. In a fully sealed with strengthen the structure of the epoxy resin housing is filled with SF6 gas,0.05MPa, with the minimum parts to achieve the above three functions, to ensure product quality, improve reliability, maintenance-free. It can be safely run for more than 20 years in normal conditions.

Product standards

- GB311.1-1997 Insulation Co-ordination for High Voltage Transmission and Distribution Equipment
- GB3804-2004 High-voltage Alternating-current Switches for Rated Voltage above 3.6kV and less than 40.5kV
- GB/T 11022-1999 Common Specifications for High-voltage Switchgear and Controlgear Standards
- DL/T593-2006 Common Specifications for High-voltage Switchgear and Controlgear Standards
- GB16926-2009 High-voltage Alternating Current Switch-Fuse Combinations
- GB/T 1985-2004 High-voltage Alternating-current Disconnectors and Earthing Switches
- GB/T 15166 -94 High-voltage Alternating-current Fuses

Operating conditions

- Ambient air temperature Limit +40℃; Lower -25℃;
- Above sea level1000m;
- Relative humidity: daily average is less than 95%, on average less than 90%;
- Seismic intensity of not more than 8 degrees;
- No fire, explosion, chemical corrosion and severe vibration in the workplace;
- Contamination level: II.

Basic Functions And Features

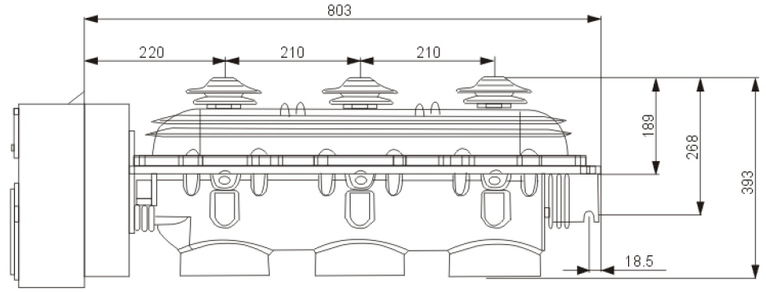
1.Load breaker switch adapts double fracture, rotary movable contact structure, with the following three kinds of operating states: Closing, opening, earthing.
2.Using SF6 gas as an arc extinguishing and insulating medium, the main circuit seals by the upper and lower housing pouring epoxy resin, the conductive function is unaffected by external influences.
3.Good safety performance. If internal arcing occurs, the housing has an internal structure weak point, it will be rushed to open, followed by the cabinet above the shutter release arc red open air overpressure stream-oriented outside the cabinet, ensure that the switch cabinet security checks.
4.Load breaker switch sets gates, opening, earthing switch three at one, filled with SF6 gas encapsulated in epoxy resin housing, three-position interlock, compact structure, high security and reliability.
5.Small size, light weight, maintenance-free, easy and safe to operate.

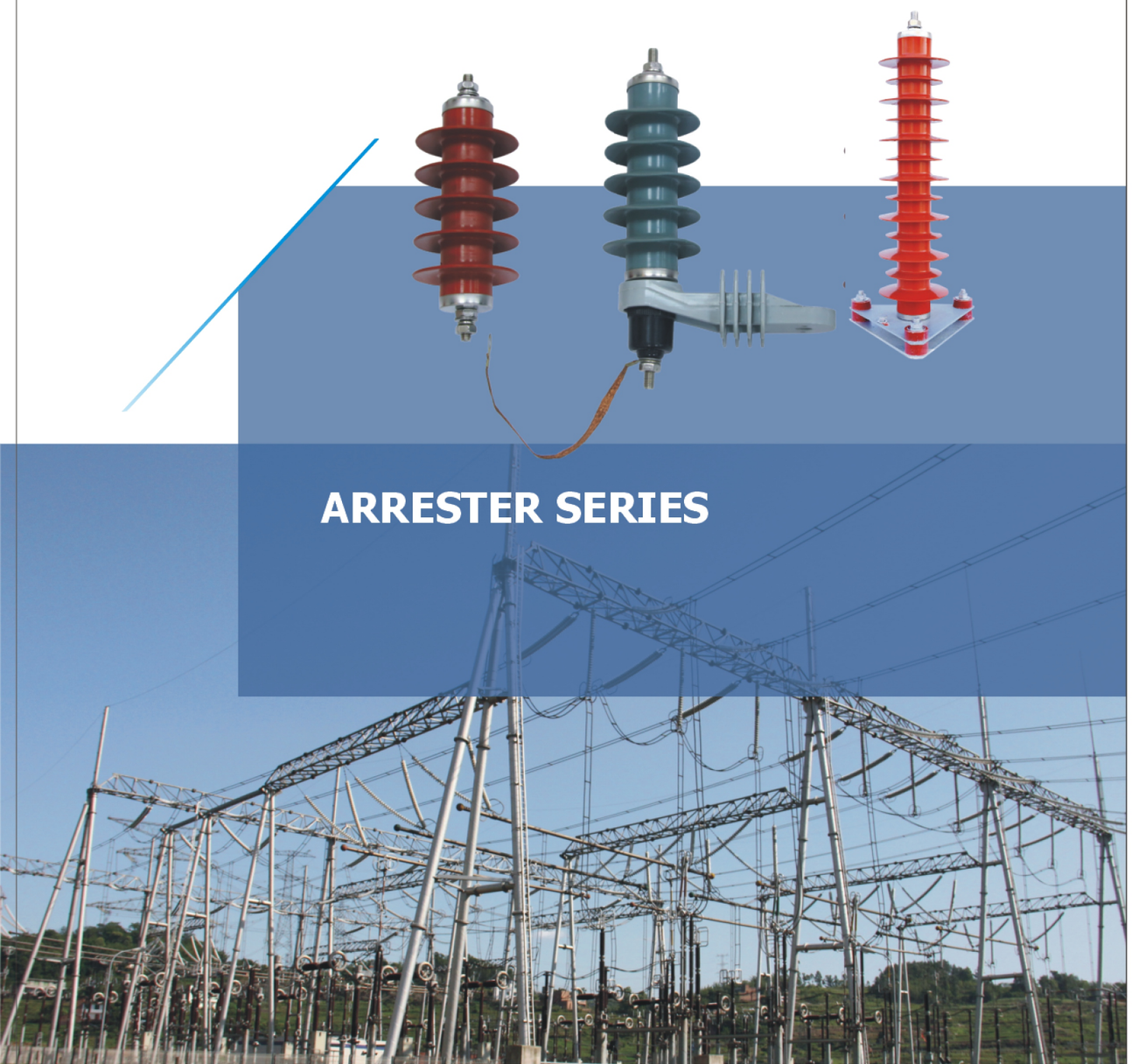
Technical parameters

1.1 Technical parameters

Item		Unit	FLN36-12/630	FLN36-12D/125-50 witch-fuse combinations
Rated voltage		kV	12	12
Rated frequency		Hz	50	50
Rated current		A	630	125
Rated insulation level	Lightning impulse withstand voltage(peak)	kV	42	48
	1min power frequency withstand voltage	kV	75	85
Rated thermal current(2S)		kA	20	
Rated dynamic current		kA	50	
Rated short-circuit on-off current		kA	25	
Rated closed loop breaking current		A	630	
Rated active on load breaking current		A	630	
Rated cable charger breaking current		A	10	
Rated short-circuit breaking current(peak)		kA		50
Rated transfer current		A		1700
Fuse type				Sfldj-12
Impact output energy		J		1+0.5
Rated thermal current for grounding switch(2S)		kA	20	2
Rated dynamic current for grounding switch(peak)		kA	50	Maximum torque
Rated short-circuit on-off current for grounding switch		kA	50	Maximum torque

Overall and Installation dimension





ARRESTER SERIES

YUEQING AISO ELECTRIC CO.,LTD.

www.aisoelectric.com

Arrester series

◆ Basic principle

Arrester is a kind of overvoltage protector mainly applied for the protection of various electrical appliances (such as transformer, switch, capacitor, trap, mutual inductor, generator, motor and power cable etc.) in power system, railway electrification system and communication system from being damaged by atmosphere overvoltage, operation overvoltage and power frequency temporary overvoltage etc. The arrester is the basis of insulation coordination in power system. The core elements of metal oxide arrester (resistor disc) applies an advanced formulate with zinc oxide as the main material and has an outstanding nonlinear properties (voltage-ampere). That is, under the normal operating voltage, the current passing through is only on microampere level. When overvoltage is incurred, the current passing through can be thousands of amperes instantly and the arrester is switched into conduction to release the energy of overvoltage. By this means the damage caused by overvoltage on the electric transmission and transformation equipments can be effectively restrained. The traditional silicon carbide arrester has high steep wave discharging voltage caused by steep wave discharging and the operation wave discharging voltage is high caused by discharging decentrality. While the zinc oxide arrester has good steep wave response properties and make no delay on steep wave voltage and provide low residual voltage during operation; and also has the advantage of no discharging decentrality. The arrester can greatly improve the protective margin of the steep wave and operation wave. And on insulation coordination, the proactive margins of steep wave, lightening wave and operation wave are nearly consistent and best protection can be provided for the power equipments. Composite coating metal oxide arrester applies integrated extruding shaping and both-end envelopment techniques and can provide high performances of sealing and anti-explosion, pollution resistance, free of cleaning and reducing the wet flashover in foggy conditions. The product is also featured by electrical erosion resistance, aging resistance, small volume, light weight and easy installation and maintenance; and is the upgraded new generation product of porcelain sheath arrester.

◆ Technical standards

The applicable standards of the product include GB11032-2010(eqv IEC60099-4:2006) Alternating non-clearance current metal oxide lightning arrester and JB/T8952-2005 AC System Composite Coating Non-clearance Metal Oxide Lighting Arrester.

◆ Environmental conditions for application

Power supply frequency: 48~62Hz
Ambient temperature: -40℃~+40℃
Maximum wind speed: ≤35m/s
Altitude: ≤2000m
Earthquake intensity: ≤8
Ice thickness: ≤10mm

1. Long-term applied power frequency voltage does not exceed its constant operation voltage.
2. Sunray radiation: The impact of a maximum sunray (1.1kW/m²) has been taken into account in the product form testing. If other heat resources exist around the arrester, please consult the manufacture for the application of arrester.

◆ Model description

YH 5 W S 5 - 17 / 50 □

- Additional features: W-pollution resistance; G: plateau; L: quakeproof
- Maximum residual voltage under nominal discharging current(kV)(peak value)
- Arrester rated voltage(kV)(effective value)
- Design serial number
- Application location: S: distribution; Z: power plant; R: capacitor; X: circuit; T: railway; D: motor type; O: in oil; L: direct current
- Construction feature: W: without clearance; C: series connection clearance; R: parallel connection clearance
- Nominal discharging current(kA)
- Composite casting metal oxide arrester (HY for old types)
  Y for porcelain casing metal oxide arrester

Product features

1. Small in size, light in weight, durable in collision, clash and breakage free in transportation, easy in installation, suitable for application in the switchboard;
2. Special structure, integrated extruding shaping, without air gap, good sealing performance, damp prevention and explosion prevention;
3. Long creepage distance, good hydrophobicity performance, strong pollution resistance abilities, and stable performance, reducible in operating maintenance;
4. Zinc oxide resistor disc in special formula, small leakage current, slow aging speed, long service life;
5. The actual DC reference voltage, square wave discharge capacity and heavy current tolerance value are all higher than the state standards.

User notice

1. Before installation, the arresters shall be stored in clean and dry rooms and kept away form the corrosions by corrosive gas or liquid.
2. Before put into operation, preventative testing shall be made on the arrester. And after the arrester has been put into operation, regular testing shall be made as follows and comparison shall be made with the data before the operation according to the attached table. (Every 5 years for arrester of 10kV or under, and every 2 years for arrester of 35kV and above)

a. Measure the insulation resistance of the arrester; b. Measure the reference voltage of the arrester under the direct current of 1mA
c. Measure the leakage current under the reference voltage of 0.75 time direct current of 1mA

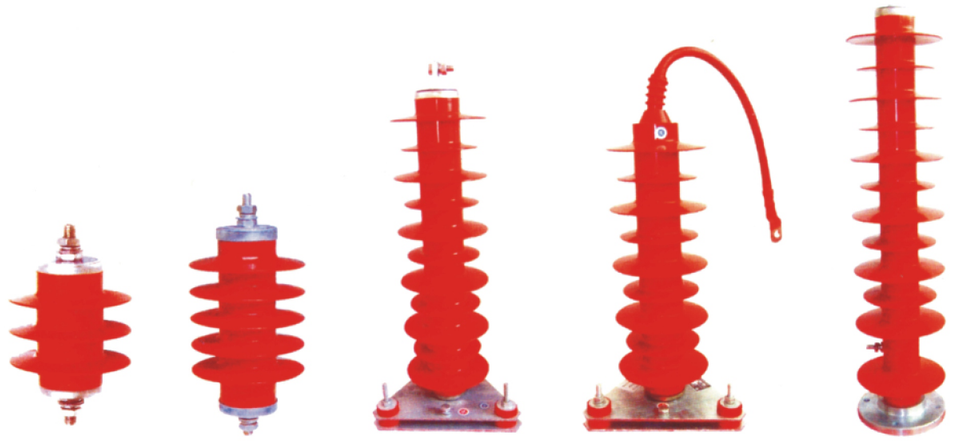
Zn oxide arrester of low voltage type

MOA type	System rated voltage kV(ms)	MOA rated voltage kV(ms)	MCOV kV(ms)	DC (U1mA) ≤kV(p)	Steep current impulse ≥kV	Lighting current impulse ≥kV	DC (U1mA) ≤kV(p)	Rectangular current impulse (2ms)A	High current impulse kA
YH1.5W-0.28/1.3	0.22	0.28	0.24	0.6	1.3			75	25
YH1.5W-0.5/2.6	0.38	0.5	0.42	1.2	2.6			75	25

Zn oxide arrester of distribution type

MOA type	System rated voltage kV(ms)	MOA rated voltage kV(ms)	MCOV kV(ms)	DC (U1mA) ≤kV(p)	Steep current impulse ≥kV	Lighting current impulse ≥kV	DC (U1mA) ≤kV(p)	Rectangular current impulse (2ms)A	High current impulse kA
YH5W-3.8/15	3	3.8	2	7.5	17.3	15	12.8	75	40
YH5WS-5/15	3	5	4	8	17.3	15	12.8	100	65
YH5WS-7.6/30	6	7.6	4	15	34.5	30	25.5	75	40
YH5WS-10/30	6	10	8	15	34.5	30	25.5	100	65
YH5WS-12.7/50	10	12.7	6.6	25	57.5	50	38.5	75	40
YH5WS-17/50	10	17	13.6	25	57.5	50	38.5	100	65

Zn oxide arrester of power station type



YH5WZ-10/27 YH5WZ-17/45 YH5WZ-51/134 YH5WZ-51/134J YH5WZ-51/134E

YH5WZ-51/134G YH5WZ-51/134 YH5WZ-51/134J YH10W-100/260 YH10W-100/260

Service conditon	Type	MOA Rated voltage kV	System nominal voltage kV	Continuous operation voltage kV	DC Min U1mA reference voltage kV≥	Residual voltage(kV)≥			Square wave current impulse withstand 2000 μS A	High current impulse 4/10 μS kA
						1/4 μS Steep current impulse	8/20 μS Lightning current impulse	30/60 μS Switching current impulse		
5kA Substation (Z)	YH5WZ-3.8/13.5	3.8	3	3.2	7.2	14.5	13.5	11.5	200	65
	YH5WZ-7.6/27	7.6	6	4.0	14.4	31	27	23		
	YH5WZ-10/27	10	6	8.0	14.4	31	27	23		
	YH5WZ-17/45	17	10	13.6	24	51.8	45	38.3		
	YH5WZ-42/134	42	35	23.4	73	154	134	114	400	100
	YH5WZ-51/134	51		40.8	73	154	134	114		
	YH5WZ-52.7/134	52.7		42.2	73	154	134	114		
	YH5WZ-54/134	54		43.2	73	154	134	114		
	YH5WZ-84/221	84	66	67.2	121	254	221	188	600	100
	YH5WZ-90/224	90		72.5	130	258	224	190		
	YH5WZ-94/224	94		75.5	134	270	234	198		
	YH5WZ-96/250	96	110	75	140	287	250	212	600	100
	YH5WZ-100/260	100		78	145	299	260	221		
	YH5WZ-102/260	102		80	148	305	266	226		
	YH5WZ-108/281	108		84	157	323	281	239		
	YH5WZ-116/302	116		88.2	168	347	302	256		
10kA Substation (Z)	YH5WZ-51/134	51	35	40.8	73	154	134	114	400	100
	YH5WZ-52.7/134	52.7		42.2	73	154	134	114		
	YH5WZ-72/184	72	66	57	105	211	184	165	600	100
	YH5WZ-75/223	75		60	127	256	223	190		
	YH5WZ-75/230	75		60	127	256	230	196		
	YH5WZ-75/250	75		60	127	288	250	213		
	YH5WZ-84/215	84		67.2	122	245	215	181		
	YH5WZ-90/235	90		72.5	130	264	235	201		
	YH5WZ-96/250	96	110	75	140	280	250	212	600	100
	YH5WZ-100/260	100		78	145	291	260	221		
	YH5WZ-102/266	102		79.6	148	297	266	226		
	YH5WZ-108/281	108		84	157	315	281	239		
	YH5WZ-116/302	116		88	168	338	302	257		
	YH5WZ-120/300	120		96	174	335	300	270		
	YH5WZ-126/328	126		95.8	183	367	328	279		
	YH5WZ-150/400	150		115	230	444	400	352		

Service conditon	Type	MOA Rated voltage kV	System nominal voltage kV	Continuous operation voltage kV	DC Min U1mA reference voltage kV≥	Residual voltage(kV)≥			Square wave current impulse withstand 2000 μS A	High current impulse 4/10 μS kA
						1/4 μS Steep current impulse	8/20 μS Lightning current impulse	30/60 μS Switching current impulse		
10kA Substation (Z)	YH10WZ-192/500	192	220	150	280	560	500	426	600,800,1000	100
	YH10WZ-200/520	200		156	290	582	520	442		
	YH10WZ-204/532	204		159	296	594	532	452		
	YH10WZ-216/562	216		168.5	314	630	562	478		
20kA Substation (Z)	YH20WZ-200/566	220	220	152	304	634	566	464	1200	100
Neutral point of transformer	YH1.5W-55/132	55	110	43	79	/	132	126	400	65
	YH1.5W-60/144	60		48	85	/	144	135		
	YH1.5W-72/186	72		58	103	/	186	174		
	YH1.5W-73/200	73		58	105	/	200	174		
	YH1.5W-96/260	96	500	77	137	/	260	243	600	100
	YH1.5W-144/320	144	220	116	205	/	320	299		
	YH1.5W-207/440	207	330	166	292	/	440	410		
Capacitor (R)	YH5WR-3.8/13.5	3.8	3	2.0	7.2	/	13.5	10.5	400	65
	YH5WR-5/13.5	5		3.8	7.2	/	13.5	10.5		
	YH5WR-10/27	10	6	8.0	14.4	/	27	20.8		
	YH5WR-17/45	17	10	13.6	24	/	45	38.3		
	YH5WR-51/134	51	35	40.8	73	/	134	105		
	YH5WR-84/221	84	66	67.2	121	/	221	176		
	YH5WR-90/235	90		72.5	130	/	235	190		
Motor (D)	YH2.5WD-4/9.5	4	3.15	3.2	5.7	10.7	9.5	7.6	400	65
	YH2.5WD-8/18.7	8	6.3	6.3	11.2	21.0	18.7	15		
	YH2.5WD-12.7/31	12.7	9.8	9.8	18.6	34.7	31	25		
	YH2.5WD-13.5/31	13.5	10.5	10.5	18.6	34.7	31	25		
Neutral point of motor(D)	YH1.5WD-2.4/6	2.4	3.2	1.9	3.4	/	6	5	200 300 400	65,100
	YH1.5WD-4.8/12	4.8	6.3	3.8	6.8	/	12	10		
	YH1.5WD-8/19	8	10.5	6.4	11.4	/	19	15.9		
	YH1.5WD-12/26	12	15.75	9.6	17	/	26	21.6		
	YH1.5WD-13.7/29.2	13.7	18	11	195	/	29.2	24.3		
Generator (D)	YH5WD-4/9.5	4	3.15	3.2	5.7	10.7	9.5	7.6	400	65
	YH5WD-8/18.7	8	6.3	6.3	11.2	21.0	18.7	15		
	YH5WD-13.5/31	13.5	10.5	10.5	18.6	34.7	31	25		
	YH5WD-17.4/40	17.5	13.8	13.8	24.4	44.8	40	32		
	YH5WD-20/45	20	15.8	15.8	28.0	50.4	45	35		
	YH5WD-23/51	23	18	18	31.9	57.2	51	40.8		
	YH5WD-25/56.2	25	20	20	35.4	62.9	56.2	45	200	65
Railway traction	YH5WT-17/45	17	10	13.6	24.0	51.8	45	38.3	400	65
	YH5WT-42/105	42	27.5	34	60	118	105	89		
	YH5WT-42/120	42		34	65	138	120	98		
	YH5WT-42/120	42		34	65	138	120	98		
	YH5WT-84/240	84	55	68	130	276	240	196		
	YH5WT-100/260	100	110	73	145	291	260	221	600	100
	YH5WT-200/520	200	220	146	290	582	520	442		

Note: "YH" is the polymeric housing metal oxide lightning arrester, if it is porcelain housing, then without "H".

Porcelain housed metal-oxide surge arrester

MOA type	Nominal voltage kV(rms)	MOA rated voltage kV(rms)	MCOV kV(rms)	DC (U1mA) ≤kV(p)	Nominal residual voltage ≥kV	Rectangular current impulse (2ms)A	Weight	H (mm)	Remark
Y5WS1-3.8/17	3	3.8	2.0	7.5	17	75	2.0	205	Distribution type
Y5WS1-7.6/30	6	7.6	4.0	15	30	75	2.4	205	
Y5WS1-12.7/50	10	12.7	6.6	25	50	75	2.7	245	
Y5WS1-5.0/17	3	5.0	3.5	7.5	17	75	2.0	205	
Y5WS1-10/30	6	10	7.0	15	30	75	2.2	205	
Y5WS1-17/50	10	17	11.5	25	50	75	2.7	245	
Y5WZ1-3.8/17	3	3.8	2.0	7.2	13.5	150	2.0	205	Power station type
Y5WZ1-7.6/27	6	7.6	4.0	14.4	27	150	2.2	205	
Y5WZ1-12.7/45	10	12.7	6.6	24	45	150	3.0	245	
Y5WZ1-42/134	35	42	23.4	73	134	400	25		
Y5WZ1-5.0/13.5	3	5.0	3.5	7.2	13.5	150	2.0	205	
Y5WZ1-10/27	6	10	7.0	14.4	27	150	2.2	205	
Y5WZ1-17/45	10	17	11.5	24	45	150	3.0	245	
Y5WZ1-51/134	35	51	40	73	134	400	25		

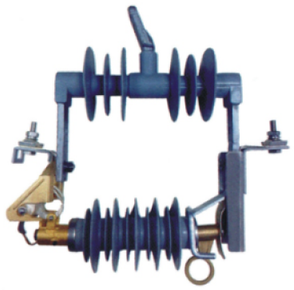
YH10W, YH5W Zinc oxide lightning arrester(export type)

◆ Usage & Feature

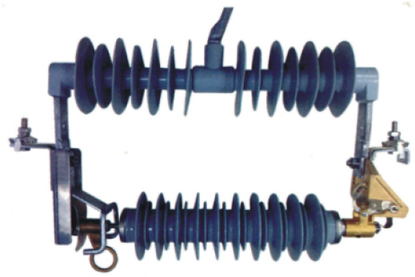
The Zinc Oxide Lightning Arrester protects the electrical equipments in AC power systems against being damaged by atmospheric over-voltage and operational over-voltage.

Norminal discharge current 5kA metal-oxide lightning arrester without gaps(export)

Type	Rated voltage kV(rms)	Maximum continuous operation voltage kV(rms)	Max. Residual voltage(kV)			Square wave impulse current withsand 2000 μs A(crest)	High current impulse 4/10 μs kA(crest)
			Steep current impulse kV(crest)	30/60 μs Switching current impulse kV(crest)	8/20 μs Lightning current impulse kV(crest)		
YH5W-3	3	2.55	9.5	7.7	9	100	65
YH5W-6	6	5.1	19.0	15.4	18	100	65
YH5W-9	9	7.65	28.5	23.1	27	100	65
YH5W-10	10	8.3	36.0	27.0	30	100	65
YH5W-11	11	9.5	38.5	30.0	33	100	65
YH5W-12	12	10.2	38.0	30.8	36	100	65
YH5W-15	15	12.7	47.5	38.5	45	100	65
YH5W-18	18	15.3	57.0	46.2	54	100	65
YH5W-21	21	17.0	66.5	53.9	63	100	65
YH5W-24	24	19.5	76.0	61.6	72	100	65
YH5W-27	27	21.9	85.5	69.3	81	100	65
YH5W-30	30	24.4	95.0	76.5	90	100	65
YH5W-33	33	26.8	104.0	84.7	99	100	65
YH5W-36	36	29.0	114.0	92.7	108	100	65
YH5W-42	42	34.1	132.3	100.1	126	100	65



YH10(5)W-3~15DL Series



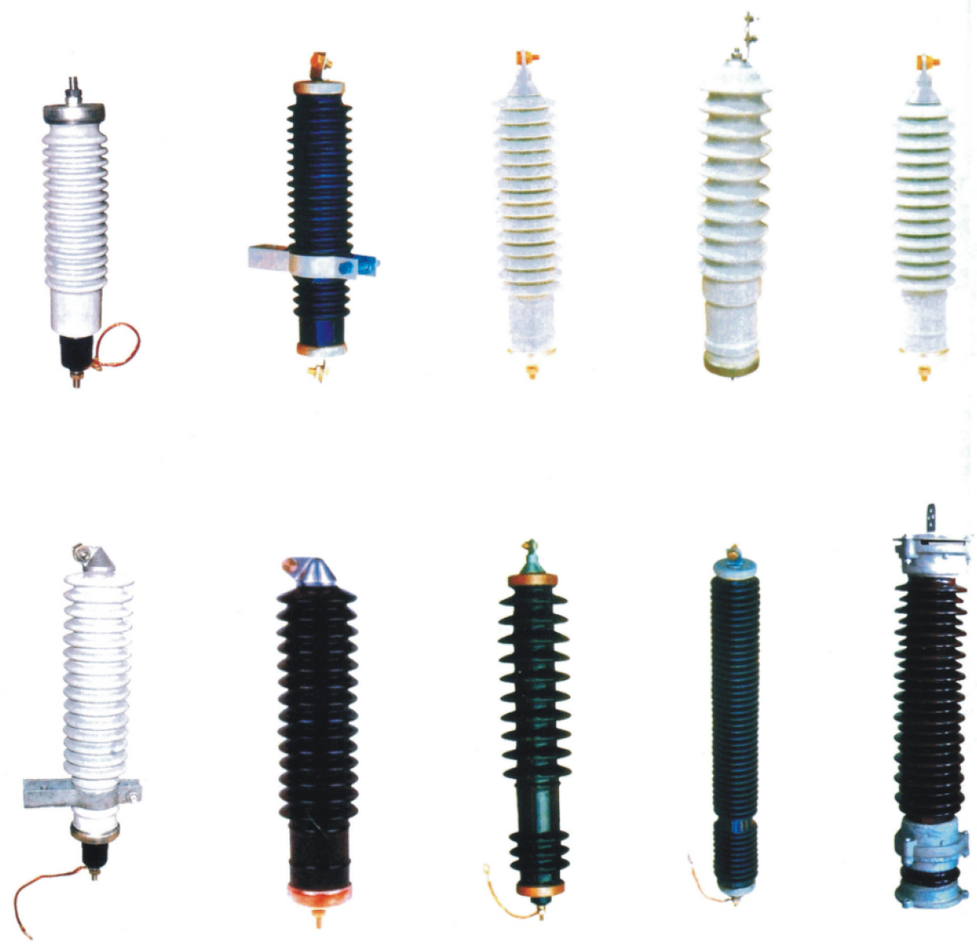
YH10(5)W-30~36DL Series

Norminal discharge current 10kA metal-oxide lightning arrester without gaps(export)

Type	Rated voltage kV(rms)	Maximum continuous operation voltage kV(rms)	Max. Residual voltage(kV)			Square wave impulse current withsand 2000 μs A(crest)	High current impulse 4/10 μs kA(crest)
			Steep current impulse kV(crest)	30/60 μs Switching current impulse kV(crest)	8/20 μs Lightning current impulse kV(crest)		
YH10W-3	3	2.55	9.5	7.7	9	250	100
YH10W-6	6	5.1	19.0	15.4	18	250	100
YH10W-9	9	7.65	28.5	23.1	27	250	100
YH10W-10	10	8.3	36.0	27.0	30	250	100
YH10W-11	11	9.5	38.5	30.0	33	250	100
YH10W-12	12	10.2	38.0	30.8	36	250	100
YH10W-15	15	12.7	47.5	38.5	45	250	100
YH10W-18	18	15.3	57.0	46.2	54	250	100
YH10W-21	21	17.0	66.5	53.9	63	250	100
YH10W-24	24	19.5	76.0	61.6	72	250	100
YH10W-27	27	21.9	85.5	69.3	81	250	100
YH10W-30	30	24.4	95.0	76.5	90	250	100
YH10W-33	33	26.8	104.0	84.7	99	250	100
YH10W-36	36	29.0	114.0	92.7	108	250	100
YH10W-42	42	34.1	133.0	100.0	126	250	100
YH10W-48	48	39.0	152.0	126.0	150	400	100
YH10W-54	54	43.0	171.0	139.0	162	400	100
YH10W-60	60	48.0	208.0	160.0	180	400	100
YH10W-66	66	53.4	230.0	172.0	198	400	100

Note: "YH" is the polymeric housing metal oxide lighting arrester, if it is porcelain housing, then without "H".

Y5C, Y10C Porcelain lightning arrester(export type)



Norminal discharge current 5kA porcelain housed metal-oxide lightning arrester with series gap(export)

Type	Rated voltage kV(rms)	Maximum continuous operation voltage kV(rms)	Sparkover voltage(kV)		8/20 μs Lightning current impulse kV(crest)	Square wave impulse current withsand 2000 μs A(crest)	High current impulse 4/10 μs kA(crest)
			Power frequency ≥ kV(r.m.s)	1.2/50 μs Lightning current ≥ kV(crest)			
Y5C-3	3	2.55	5.0	7.8	9	100	65
Y5C-6	6	5.1	10.0	15.5	18	100	65
Y5C-9	9	7.65	16.5	24.5	27	100	65
Y5C-10	10	8.4	18.0	27.2	30	100	65
Y5C-12	12	10.2	21.0	32.6	36	100	65
Y5C-15	15	12.7	25.0	38.8	45	100	65
Y5C-18	18	15.3	31.0	48.1	54	100	65
Y5C-21	21	17.0	34.0	52.7	63	100	65
Y5C-24	24	19.2	39.0	60.5	75	100	65
Y5C-27	27	21.9	45.0	69.8	81	100	65
Y5C-30	30	24.4	50.0	77.5	90	100	65
Y5C-33	33	26.8	55.0	85.3	99	100	65
Y5C-36	36	29.0	60.0	93.0	108	100	65
Y5C-42	42	34.1	70.0	108.5	126	100	65

Norminal discharge current 10kA porcelain housed metal-oxide lightning arrester with series gap(export)

Type	Rated voltage kV(rms)	Maximum continuous operation voltage kV(rms)	Sparkover voltage(kV)		8/20 μs Lightning current impulse kV(crest)	Line discharge class	High current impulse 4/10 μs kA(crest)
			Power frequency ≥ kV(r.m.s)	1.2/50 μs Lightning current ≥ kV(crest)			
Y10C-3	3	2.55	5.0	7.8	9	1	100
Y10C-6	6	5.1	10.0	15.5	18	1	100
Y10C-9	9	7.65	16.5	24.5	27	1	100
Y10C-10	10	8.4	18.0	27.2	30	1	100
Y10C-12	12	10.2	21.0	32.6	36	1	100
Y10C-15	15	12.7	25.0	38.8	45	1	100
Y10C-18	18	15.3	31.0	48.1	54	1	100
Y10C-21	21	17.0	34.0	52.7	63	1	100
Y10C-24	24	19.2	39.0	60.5	75	1	100
Y10C-27	27	21.9	45.0	69.8	81	1	100
Y10C-30	30	24.4	50.0	77.5	90	1	100
Y10C-33	33	26.8	55.0	85.3	99	1	100
Y10C-36	36	29.0	60.0	93.0	108	1	100
Y10C-42	42	34.1	70.0	108.5	126	1	100

Note: “Y” is the polymeric housing metal oxide lighting arrester, if it is porcelain housing, then without “YH”.

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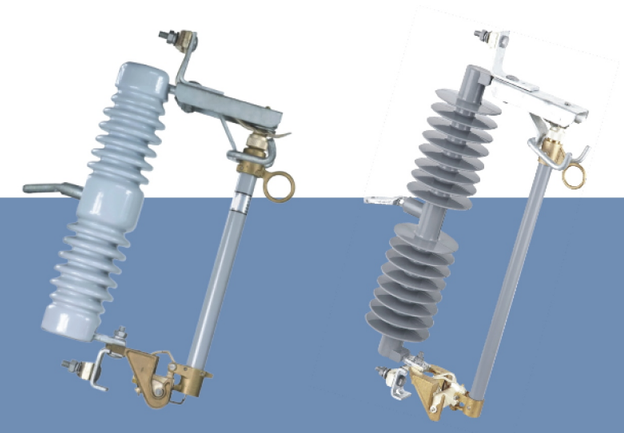
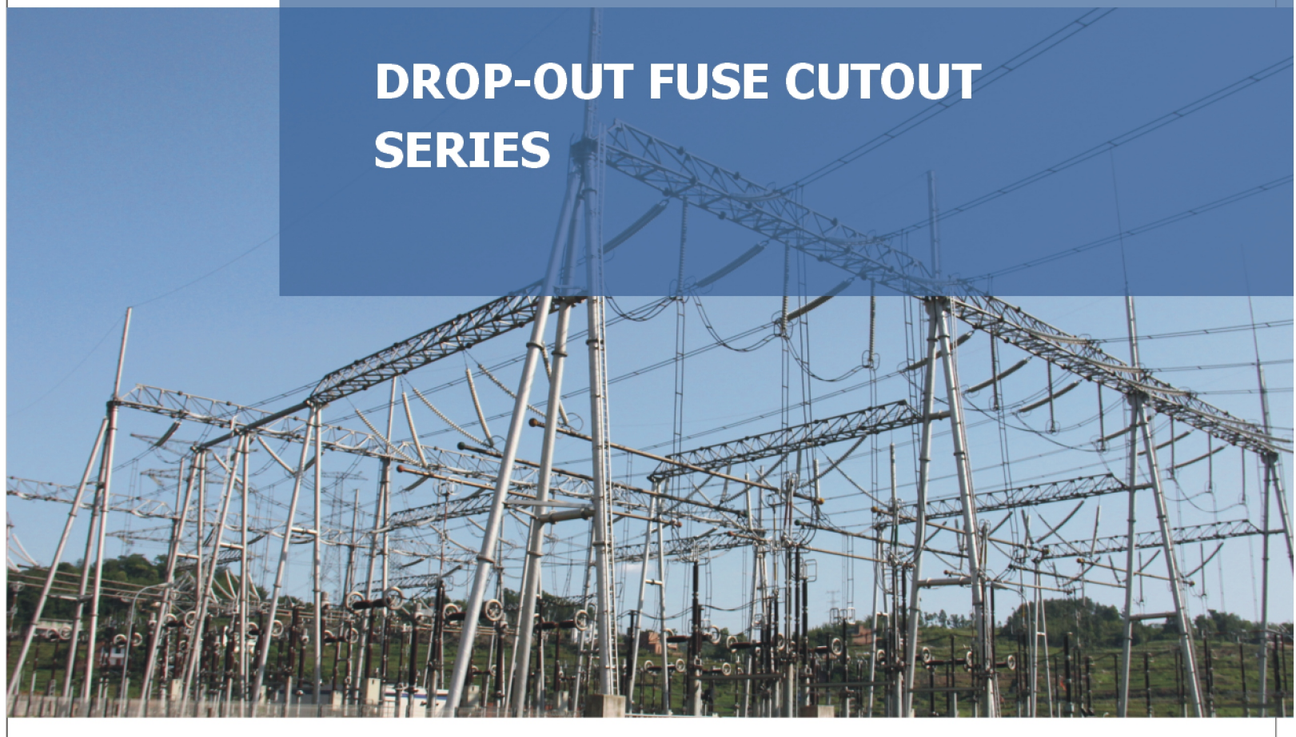


DROP-OUT FUSE CUTOUT SERIES



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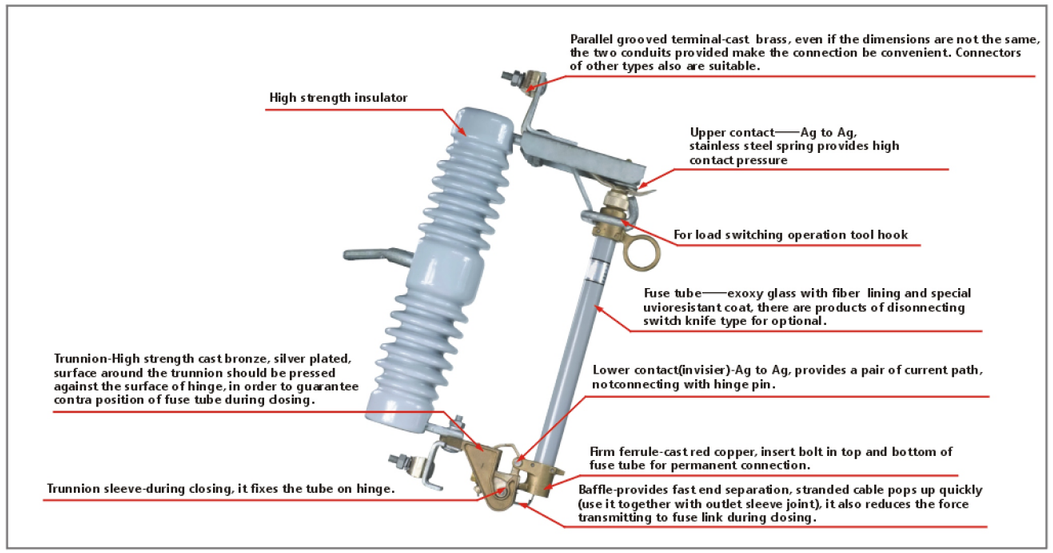
Drop-out fuse cutout



◆ General

Drop-out fuse cutout and load switching fuse cutout are of outdoor used high voltage protective device, to be connected with incoming feeder of distribution transformer or distribution lines, it mainly protect transformer or lines from short circuit and overload, and on/off loading current, Drop-out fuse cutout is composed of insulate insulator supports and fuse tube, static contacts is fixed on two sides of insulator support and moving contact is installed on two ends of fuse tube, Fuse tube is composed of inside arc-extinguishing tube. Outer phenolic compound paper tube or epoxy glass tube, load switching fuse cutout provides enforced elastic auxiliary contacts and arc-extinguishing enclosure for switching on-off loading current.

At normally working via fuse link tightened the fuse tube is fixed to form up of close position. In case system occur faults, fault current result in fuse melt immediately and take place electric arc, which let arc-extinguishing tube being heated and explode a lot of gas. This will produce high pressure and blow off the arc along with tube. After fuse link melt moving contact has no tightened strength again, mechanism is locked and fuse tube drop out, cutout now is in open position. When it needs to switch off during cutout loading, operator shall via insulating operating sticks pull the moving contact, at its beginning main contact and auxiliary static contact is contacted still. Whiling pulling the auxiliary contact is separated between auxiliary contacts there occur electric arc and the arc will be lengthened in arc-extinguishing enclosure gap and meanwhile arc-extinguishing explode gas to blow off the arc during current passing zero.

◆ Application and operative standard

This product is applicable for branch line of distribution line of 10~35kV and primary side of distribution transformer, used to protect the equipment against overload or short-circuit, and break and make the rated load current.

Model of this product is prepared according to JB/T8321 "The framing method for the type of alternating current high-voltage fuse" , the product parameters are in accordance with GB15166.3 "Alternating-current high-voltage fuses-expulsion fuse" . Revise and carry out according to JB/DQ2139 "Temporary technical conditions for outdoor high-voltage alternating-current drop-out fuse of 10~35kV" for the important parameters and configuration modes that have not been well defined in the above standards.

◆ Service conditions

1. Environment temperature: -40℃~+40℃;
2. Relative humidity: daily average value not more than 95%, on average less than 90%;
3. The location of altitude not more than 1000m (high altitude type not more than 3000m);
4. Wind speed not more than 34m/s;
5. Ice cover thickness not more than 20mm;
6. Installation site should be no fire and explosion danger, chemical corrosion and violent cibration.

◆ Model description

H □ R W □ □-□ □ / □-□

- Rated breaking current(kA)
- Max. rated current of homogeneous series of fuse-links(A)
- Other marks
- Rated voltage(kV)
- Design No.
- Protected objects: T-transformer; M-motor; P-voltage transformer; C-capacitor
- Installation locations: W-outdoor; N-indoor
- Product name: R-fuse
- Structure features: X-limiting current type; P-injection type (omitted)
- Type of insulator: H-composite; no mark for porcelain type

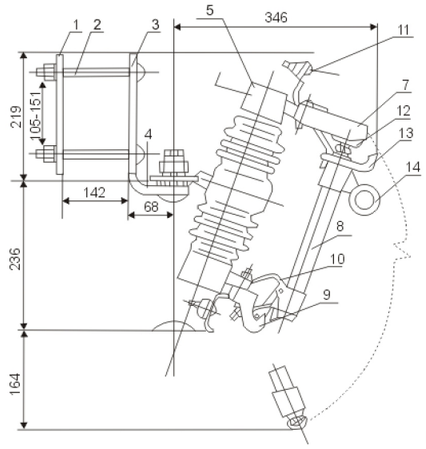
Note: Other marks refer to the following situations:

a) The product that has been improved greatly, but not the developed new product needs to be distinguished from the original model, so, it is marked with A,B,C⋯.

b) The product that is combined with other functional units under the same variety, it is expressed with the upper case letter of Chinese phonetic alphabet of functional unit, for example:
F-with load breaking device B-with arrester

c) The derived product that is applicable for the special environment conditions is expressed with the following codes and brackets, for example:
(Th)-Damp-hot zone type; (TA)-Dry-hot zone type; (G)-High altitude type; (W)-Pollution resistance type

◆ Drawing of drop-out fuse cutout



1. Nut
2. Long bolts
3. Mounting bracket A
4. Mounting bracket B
5. Porcelain insulator
6. Spring washer
7. One-piece channel
8. Fuse tube
9. Lower socket
10. Lower contacts
11. Connector
12. Upper contacts
13. Attachment hooks
14. Operation ring

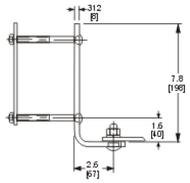
Note: Installation bracket A and B are detailed in Table 2

Table 1

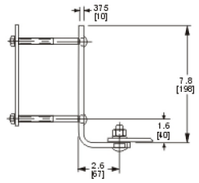
Terminal connectors		
Connector type	Wire size	Catalog no.suffix
Parallel-groove clamp, tin-plated bronze	#6-4/0 ACSR or 250 MCM	-D
Small eyebolts	#8-2/0 stranded	-J
Large eyebolts	#6-4/0 ACSR or 250 MCM	-M

Table 2

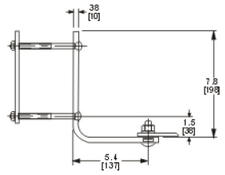
Mounting brackets	
Mounting brackets type	Catalog no.suffix
NEMA A bracket	-A
NEMA heavy duty "B" bracket with carriage bolts M12*50 for adjust bracket to fit crossarms.	-B
Extended crossarm bracket(Horizontal section is 70mm longer than NEMA "B" bracket)	-E
Pole mounting bracket	-P



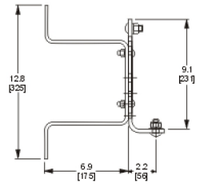
NEMA A brackets



NEMA B brackets



Extended brackets



Pole mounting brackets

Main technical parameters

Type	Rated voltage (kV)	Max. Operating voltage (kV)	Rated current (A)	Breaking current (kA)	Power -frequency dry withstand voltage(kV)	Power -frequency wet withstand voltage(kV)	Impulse voltage (kV)	Creepage distance (mm)	Weight (kg)
RW3-12/100	10	12	100	6.3	42	30	75	230	5.4
RW3-12/200	10	12	200	8.0	42	30	75	230	5.6

Type	Rated voltage (kV)	Max. Operating voltage (kV)	Rated current (A)	Breaking current (kA)	Power -frequency dry withstand voltage(kV)	Power -frequency wet withstand voltage(kV)	Impulse voltage (kV)	Creepage distance (mm)	Weight (kg)
RW4-12/100	10	12	100	6.3	42	30	75	260	5.4
RW4-12/200	10	12	200	8.0	42	30	75	260	5.6

Type	Rated voltage (kV)	Max. Operating voltage (kV)	Rated current (A)	Breaking current (kA)	Power -frequency dry withstand voltage(kV)	Power -frequency wet withstand voltage(kV)	Impulse voltage (kV)	Creepage distance (mm)	Weight (kg)
RW7-12/100	10	12	100	6.3	42	30	75	260	5.5
RW7-12/200	10	12	200	8.0	42	30	75	260	5.7

Type	Rated voltage (kV)	Max. Operating voltage (kV)	Rated current (A)	Breaking current (kA)	Power -frequency dry withstand voltage(kV)	Power -frequency wet withstand voltage(kV)	Impulse voltage (kV)	Creepage distance (mm)	Weight (kg)
RW10-12/100	10	12	100	6.3	42	30	75	260	5.6
RW10-12/200	10	12	200	8.0	42	30	75	260	5.8

Type	Rated voltage (kV)	Max. Operating voltage (kV)	Rated current (A)	Breaking current (kA)	Power -frequency dry withstand voltage(kV)	Power -frequency wet withstand voltage(kV)	Impulse voltage (kV)	Creepage distance (mm)	Weight (kg)
RW11-12/100	10	12	100	6.3	42	30	75	260	5.6
RW11-12/200	10	12	200	8.0	42	30	75	260	5.8

Type	Rated voltage (kV)	Max. Operating voltage (kV)	Rated current (A)	Breaking current (kA)	Power -frequency dry withstand voltage(kV)	Power -frequency wet withstand voltage(kV)	Impulse voltage (kV)	Creepage distance (mm)	Weight (kg)
PRWG1-12/100	10	12	100	6.3	50	35	85	315	8.6
PRWG1-12/200	10	12	200	8.0	50	35	85	315	8.8

Type	Rated voltage (kV)	Max. Operating voltage (kV)	Rated current (A)	Breaking current (kA)	Power -frequency dry withstand voltage(kV)	Power -frequency wet withstand voltage(kV)	Impulse voltage (kV)	Creepage distance (mm)	Weight (kg)
RW10-12F/100	10	12	100	6.3	42	30	75	260	6.3
RW10-12F/200	10	12	200	8.0	42	30	75	260	6.5

Type	Rated voltage (kV)	Max. Operating voltage (kV)	Rated current (A)	Breaking current (kA)	Power -frequency dry withstand voltage(kV)	Power -frequency wet withstand voltage(kV)	Impulse voltage (kV)	Creepage distance (mm)	Weight (kg)
PRW11-12F/100	10	12	100	6.3	42	30	75	260	7.5
PRW11-12F/200	10	12	200	8.0	42	30	75	260	7.5

Type	Rated voltage (kV)	Max. Operating voltage (kV)	Rated current (A)	Breaking current (kA)	Power -frequency dry withstand voltage(kV)	Power -frequency wet withstand voltage(kV)	Impulse voltage (kV)	Creepage distance (mm)	Weight (kg)
PRWG1-12F/100	10	12	100	6.3	50	35	85	315	8.8
PRWG1-12F/200	10	12	200	8.0	50	35	85	315	9.1

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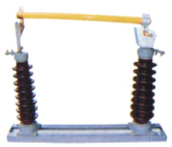
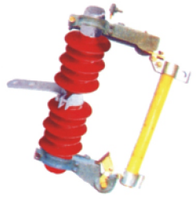
Type	Rated voltage (kV)	Max. Operating voltage (kV)	Rated current (A)	Breaking current (kA)	Power -frequency dry withstand voltage(kV)	Power -frequency wet withstand voltage(kV)	Impulse voltage (kV)	Creepage distance (mm)	Weight (kg)
PRWG2-40.5/100	35	40.5	100	5.0	95	86	185	935	18.5
PRWG2-40.5/200	35	40.5	200	8.0	95	86	185	935	19.0



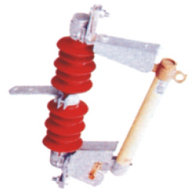
Type	Rated voltage (kV)	Max. Operating voltage (kV)	Rated current (A)	Breaking current (kA)	Power -frequency dry withstand voltage(kV)	Power -frequency wet withstand voltage(kV)	Impulse voltage (kV)	Creepage distance (mm)	Weight (kg)
RW5-40.5/100	35	40.5	100	5.0	95	86	185	746	20
RW5-40.5/200	35	40.5	200	8.0	95	86	185	746	21

Type	Rated voltage (kV)	Max. Operating voltage (kV)	Rated current (A)	Breaking current (kA)	Power -frequency dry withstand voltage(kV)	Power -frequency wet withstand voltage(kV)	Impulse voltage (kV)	Creepage distance (mm)	Weight (kg)
RW8-12X/100	10	12	100	6.3	42	30	75	280	5.1
RW8-12X/200	10	12	200	8.0	42	30	75	280	5.3

Type	Rated voltage (kV)	Max. Operating voltage (kV)	Rated current (A)	Breaking current (kA)	Power -frequency dry withstand voltage(kV)	Power -frequency wet withstand voltage(kV)	Impulse voltage (kV)	Creepage distance (mm)	Weight (kg)
ARW3-12/100	10	12	100	6.3	42	30	75	300	2.9
ARW3-12/200	10	12	200	8.0	42	30	75	300	3.1



Type	Rated voltage (kV)	Max. Operating voltage (kV)	Rated current (A)	Breaking current (kA)	Power -frequency dry withstand voltage(kV)	Power -frequency wet withstand voltage(kV)	Impulse voltage (kV)	Creepage distance (mm)	Weight (kg)
ARW4-12/100	10	12	100	6.3	42	30	75	340	4.2
ARW4-12/200	10	12	200	8.0	42	30	75	340	4.4



Type	Rated voltage (kV)	Max. Operating voltage (kV)	Rated current (A)	Breaking current (kA)	Power -frequency dry withstand voltage(kV)	Power -frequency wet withstand voltage(kV)	Impulse voltage (kV)	Creepage distance (mm)	Weight (kg)
ARW7-12/100	10	12	100	6.3	42	30	75	340	4.2
ARW7-12/200	10	12	200	8.0	42	30	75	340	4.4

Type	Rated voltage (kV)	Max. Operating voltage (kV)	Rated current (A)	Breaking current (kA)	Power -frequency dry withstand voltage(kV)	Power -frequency wet withstand voltage(kV)	Impulse voltage (kV)	Creepage distance (mm)	Weight (kg)
ARW10-12/100	10	12	100	6.3	42	30	75	340	3.7
ARW10-12/200	10	12	200	8.0	42	30	75	340	3.9

Type	Rated voltage (kV)	Max. Operating voltage (kV)	Rated current (A)	Breaking current (kA)	Power -frequency dry withstand voltage(kV)	Power -frequency wet withstand voltage(kV)	Impulse voltage (kV)	Creepage distance (mm)	Weight (kg)
ARW11-12/100	10	12	100	6.3	42	30	75	340	3.9
ARW11-12/200	10	12	200	8.0	42	30	75	340	4.1

Type	Rated voltage (kV)	Max. Operating voltage (kV)	Rated current (A)	Breaking current (kA)	Power -frequency dry withstand voltage(kV)	Power -frequency wet withstand voltage(kV)	Impulse voltage (kV)	Creepage distance (mm)	Weight (kg)
APRWG1-12/100	10	12	100	6.3	50	35	85	380	4.4
APRWG1-12/200	10	12	200	8.0	50	35	85	380	4.6

Type	Rated voltage (kV)	Max. Operating voltage (kV)	Rated current (A)	Breaking current (kA)	Power -frequency dry withstand voltage(kV)	Power -frequency wet withstand voltage(kV)	Impulse voltage (kV)	Creepage distance (mm)	Weight (kg)
ARW10-12F/100	10	12	100	6.3	42	30	75	340	4.0
ARW10-12F/200	10	12	200	8.0	42	30	75	340	4.2

Type	Rated voltage (kV)	Max. Operating voltage (kV)	Rated current (A)	Breaking current (kA)	Power -frequency dry withstand voltage(kV)	Power -frequency wet withstand voltage(kV)	Impulse voltage (kV)	Creepage distance (mm)	Weight (kg)
ARW11-12F/100	10	12	100	6.3	42	30	75	340	4.5
ARW11-12F/200	10	12	200	8.0	42	30	75	340	4.7

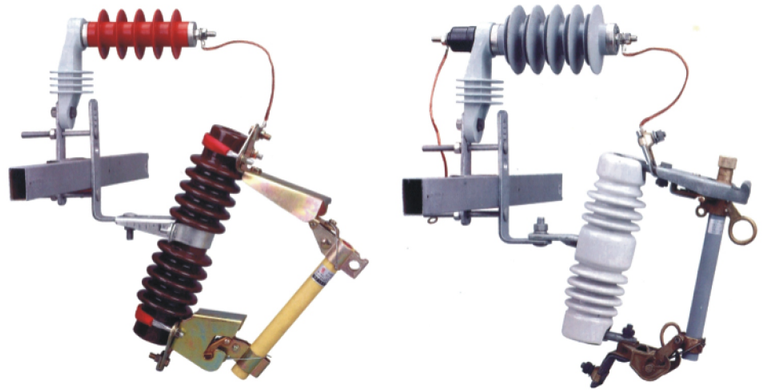
Type	Rated voltage (kV)	Max. Operating voltage (kV)	Rated current (A)	Breaking current (kA)	Power -frequency dry withstand voltage(kV)	Power -frequency wet withstand voltage(kV)	Impulse voltage (kV)	Creepage distance (mm)	Weight (kg)
APRWG1-12F/100	10	12	100	6.3	50	35	85	380	4.7
APRWG1-12F/200	10	12	200	8.0	50	35	85	380	5.0

Type	Rated voltage (kV)	Max. Operating voltage (kV)	Rated current (A)	Breaking current (kA)	Power -frequency dry withstand voltage(kV)	Power -frequency wet withstand voltage(kV)	Impulse voltage (kV)	Creepage distance (mm)	Weight (kg)
APRWG2-40.5/100	35	40.5	100	5.0	95	86	185	1200	8.2
APRWG2-40.5/200	35	40.5	200	8.0	95	86	185	1200	8.7

Type	Rated voltage (kV)	Max. Operating voltage (kV)	Rated current (A)	Breaking current (kA)	Power -frequency dry withstand voltage(kV)	Power -frequency wet withstand voltage(kV)	Impulse voltage (kV)	Creepage distance (mm)	Weight (kg)
ARW5-40.5/100	35	40.5	100	5.0	95	86	185	1080	13.5
ARW5-40.5/200	35	40.5	200	8.0	95	86	185	1080	14.0

Type	Rated voltage (kV)	Max. Operating voltage (kV)	Rated current (A)	Breaking current (kA)	Power -frequency dry withstand voltage(kV)	Power -frequency wet withstand voltage(kV)	Impulse voltage (kV)	Creepage distance (mm)	Weight (kg)
ARW6-12X/100	10	12	100	6.3	4.2	30	75	340	4.1
ARW6-12X/200	10	12	200	8.0	4.2	30	75	340	4.3

Surge arrester/Type L fuse cutout combination

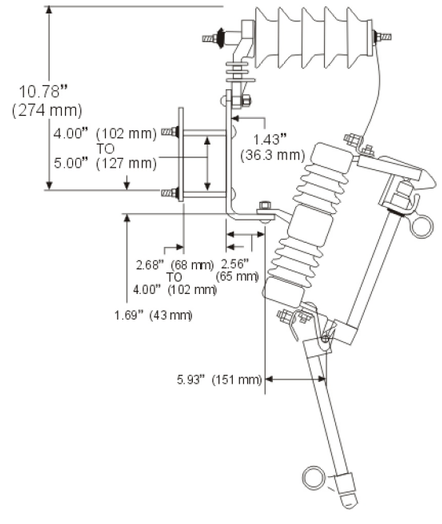


◆ General

Surge arrester/Type L interchangeable fuse cutout combinations are available in a wide variety of arrester designs and fuse cutout ratings Type L fuse cutouts are available in either of two voltage ratings: 15kV and 27kV, and in standard creepage or extra creepage units to meet the user's application needs. Cutouts are available with a 100 A or 200 A fuse holder.

◆ Mounting diagram

Shows an outline drawing of an housed surge arrester/Type L fuse cutout combination.



12-15kV

Type	Rated voltage (kV)	Rated current (A)	Breaking current (kA)	Impulse voltage (kV)	Power -frequency withstand voltage(kV)	Creepage distance (mm)	Weight (kg)	Dimension (cm)
ASC1-12/100	12-15	100	8000	110	40	250	5.5	41x36x9.5
ASC1-12/200	12-15	200	10000	110	40	250	6	

12-15kV

Type	Rated voltage (kV)	Rated current (A)	Breaking current (kA)	Impulse voltage (kV)	Power -frequency withstand voltage(kV)	Creepage distance (mm)	Weight (kg)	Dimension (cm)
ASC2-12/100	12-15	100	8000	110	40	250	5.5	41x36x9.5
ASC2-12/200	12-15	200	10000	110	40	250	6	

12-15kV

Type	Rated voltage (kV)	Rated current (A)	Breaking current (kA)	Impulse voltage (kV)	Power -frequency withstand voltage(kV)	Creepage distance (mm)	Weight (kg)	Dimension (cm)
ASC3-12/100	12-15	100	8000	110	40	250	6.5	40.5x30x10.5
ASC3-12/200	12-15	200	10000	110	40	250	7	

12-15kV

Type	Rated voltage (kV)	Rated current (A)	Breaking current (kA)	Impulse voltage (kV)	Power -frequency withstand voltage(kV)	Creepage distance (mm)	Weight (kg)	Dimension (cm)
ASC4-12/100	12-15	100	8000	110	40	250	6.8	40.5x30.5x11
ASC4-12/200	12-15	200	10000	110	40	250	7	

15-24kV

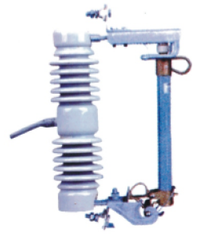
Type	Rated voltage (kV)	Rated current (A)	Breaking current (kA)	Impulse voltage (kV)	Power -frequency withstand voltage(kV)	Creepage distance (mm)	Weight (kg)	Dimension (cm)
ASC1-15/100	15-24	100	8000	125	45	350	6.8	50x36x10.5
ASC1-15/200	15-24	200	10000	125	45	350	7.2	

15-24kV

Type	Rated voltage (kV)	Rated current (A)	Breaking current (kA)	Impulse voltage (kV)	Power -frequency withstand voltage(kV)	Creepage distance (mm)	Weight (kg)	Dimension (cm)
ASC2-15/100	15-24	100	8000	125	45	350	7.1	50x37x11.5
ASC2-15/200	15-24	200	10000	125	45	350	7.6	

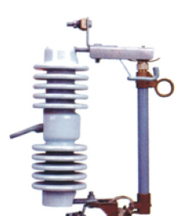
15-24kV

Type	Rated voltage (kV)	Rated current (A)	Breaking current (kA)	Impulse voltage (kV)	Power -frequency withstand voltage(kV)	Creepage distance (mm)	Weight (kg)	Dimension (cm)
ASC3-15/100	15-24	100	8000	125	45	350	7.6	50x38x11.5
ASC3-15/200	15-24	200	10000	125	45	350	8.0	



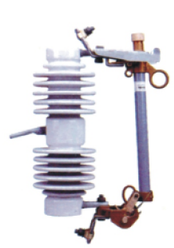
15-24kV

Type	Rated voltage (kV)	Rated current (A)	Breaking current (kA)	Impulse voltage (kV)	Power -frequency withstand voltage(kV)	Creepage distance (mm)	Weight (kg)	Dimension (cm)
ASC4-15/100	15-24	100	8000	125	45	350	7.2	50x37x11
ASC4-15/200	15-24	200	10000	125	45	350	7.6	



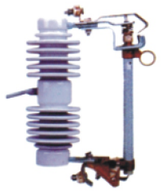
24-27kV

Type	Rated voltage (kV)	Rated current (A)	Breaking current (kA)	Impulse voltage (kV)	Power -frequency withstand voltage(kV)	Creepage distance (mm)	Weight (kg)	Dimension (cm)
ASC1-24/100	24-27	100	8000	150	65	540	9.0	50x38.5x14
ASC1-24/200	24-27	200	10000	150	65	540	9.4	



24-27kV

Type	Rated voltage (kV)	Rated current (A)	Breaking current (kA)	Impulse voltage (kV)	Power -frequency withstand voltage(kV)	Creepage distance (mm)	Weight (kg)	Dimension (cm)
ASC2-24/100	24-27	100	8000	150	65	540	9.2	49x35.5x14.5
ASC2-24/200	24-27	200	10000	150	65	540	9.6	



24-27kV

Type	Rated voltage (kV)	Rated current (A)	Breaking current (kA)	Impulse voltage (kV)	Power -frequency withstand voltage(kV)	Creepage distance (mm)	Weight (kg)	Dimension (cm)
ASC3-24/100	24-27	100	8000	150	65	540	9.5	50x38.5x15.5
ASC3-24/200	24-27	200	10000	150	65	540	10	

24-27kV

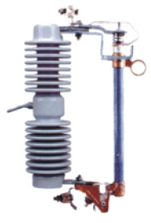
Type	Rated voltage (kV)	Rated current (A)	Breaking current (kA)	Impulse voltage (kV)	Power -frequency withstand voltage(kV)	Creepage distance (mm)	Weight (kg)	Dimension (cm)
ASC4-24/100	24-27	100	8000	150	65	540	9.3	50x32.5x15
ASC4-24/200	24-27	200	10000	150	65	540	9.7	

30-33kV

Type	Rated voltage (kV)	Rated current (A)	Breaking current (kA)	Impulse voltage (kV)	Power -frequency withstand voltage(kV)	Creepage distance (mm)	Weight (kg)	Dimension (cm)
ASC1-30/100	30-33	100	8000	170	70	700	10.5	59x36x13.5
ASC1-30/200	30-33	200	10000	170	70	700	11.0	

30-33kV

Type	Rated voltage (kV)	Rated current (A)	Breaking current (kA)	Impulse voltage (kV)	Power -frequency withstand voltage(kV)	Creepage distance (mm)	Weight (kg)	Dimension (cm)
ASC2-30/100	30-33	100	8000	170	70	700	11.0	58x35x13.5
ASC2-30/200	30-33	200	10000	170	70	700	11.5	



30-33kV

Type	Rated voltage (kV)	Rated current (A)	Breaking current (kA)	Impulse voltage (kV)	Power -frequency withstand voltage(kV)	Creepage distance (mm)	Weight (kg)	Dimension (cm)
ASC3-30/100	30-33	100	8000	170	70	700	13.0	59x37.5x14
ASC3-30/200	30-33	200	10000	170	70	700	13.5	

30-33kV

Type	Rated voltage (kV)	Rated current (A)	Breaking current (kA)	Impulse voltage (kV)	Power -frequency withstand voltage(kV)	Creepage distance (mm)	Weight (kg)	Dimension (cm)
ASC4-30/100	30-33	100	8000	170	70	700	13.0	59x37x14
ASC4-30/200	30-33	200	10000	170	70	700	13.5	

33-36kV

Type	Rated voltage (kV)	Rated current (A)	Breaking current (kA)	Impulse voltage (kV)	Power -frequency withstand voltage(kV)	Creepage distance (mm)	Weight (kg)	Dimension (cm)
ASC1-33/100	33-36	100	8000	170	70	720	12.5	66x37.5x14
ASC1-33/200	33-36	200	10000	170	70	720	13.0	

33-36kV

Type	Rated voltage (kV)	Rated current (A)	Breaking current (kA)	Impulse voltage (kV)	Power -frequency withstand voltage(kV)	Creepage distance (mm)	Weight (kg)	Dimension (cm)
ASC2-33/100	33-36	100	8000	170	70	720	12.0	65x35x13.5
ASC2-33/200	33-36	200	10000	170	70	720	12.5	

33-36kV

Type	Rated voltage (kV)	Rated current (A)	Breaking current (kA)	Impulse voltage (kV)	Power -frequency withstand voltage(kV)	Creepage distance (mm)	Weight (kg)	Dimension (cm)
ASC3-33/100	33-36	100	8000	170	70	720	12.5	66x37.5x14
ASC3-33/200	33-36	200	10000	170	70	720	13.0	

33-36kV

Type	Rated voltage (kV)	Rated current (A)	Breaking current (kA)	Impulse voltage (kV)	Power -frequency withstand voltage(kV)	Creepage distance (mm)	Weight (kg)	Dimension (cm)
ASC4-33/100	33-36	100	8000	170	70	720	13.0	66x37.5x14
ASC4-33/200	33-36	200	10000	170	70	720	13.2	

12-15kV

Type	Rated voltage (kV)	Rated current (A)	Breaking current (kA)	Impulse voltage (kV)	Power -frequency withstand voltage(kV)	Creepage distance (mm)	Weight (kg)	Dimension (cm)
ASC1-12F/100	12-15	100	8000	110	40	250	7.3	45x34x15.5
ASC1-12F/200	12-15	200	10000	110	40	250	7.5	

15-24kV

Type	Rated voltage (kV)	Rated current (A)	Breaking current (kA)	Impulse voltage (kV)	Power -frequency withstand voltage(kV)	Creepage distance (mm)	Weight (kg)	Dimension (cm)
ASC1-15F/100	15-24	100	8000	125	45	350	8.1	55x36x15.5
ASC1-15F/200	15-24	200	10000	125	45	350	8.6	

24-27kV

Type	Rated voltage (kV)	Rated current (A)	Breaking current (kA)	Impulse voltage (kV)	Power -frequency withstand voltage(kV)	Creepage distance (mm)	Weight (kg)	Dimension (cm)
ASC1-24F/100	24-27	100	8000	150	65	540	11.0	55x38x15.5
ASC1-24F/200	24-27	200	10000	150	65	540	11.2	

30-33kV

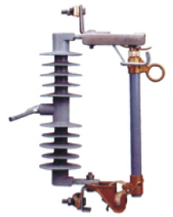
Type	Rated voltage (kV)	Rated current (A)	Breaking current (kA)	Impulse voltage (kV)	Power -frequency withstand voltage(kV)	Creepage distance (mm)	Weight (kg)	Dimension (cm)
ASC1-30F/100	30-33	100	8000	170	70	700	13.2	66x38x15.5
ASC1-30F/200	30-33	200	10000	170	70	700	13.7	

12-15kV

Type	Rated voltage (kV)	Rated current (A)	Breaking current (kA)	Impulse voltage (kV)	Power -frequency withstand voltage(kV)	Creepage distance (mm)	Weight (kg)	Dimension (cm)
ASC1W-12/100	12-15	100	8000	110	40	380	3.7	41.5x37.5x10.5
ASC1W-12/200	12-15	200	10000	110	40	380	4.0	

15-24kV

Type	Rated voltage (kV)	Rated current (A)	Breaking current (kA)	Impulse voltage (kV)	Power -frequency withstand voltage(kV)	Creepage distance (mm)	Weight (kg)	Dimension (cm)
HTHC1-15/100	15-24	100	8000	125	45	450	3.7	45x37.5x10.5
HTHC1-15/200	15-24	200	10000	125	45	450	4.0	



24-27kV

Type	Rated voltage (kV)	Rated current (A)	Breaking current (kA)	Impulse voltage (kV)	Power -frequency withstand voltage(kV)	Creepage distance (mm)	Weight (kg)	Dimension (cm)
HTHC1W-24/100	24-27	100	8000	150	65	540	4.0	50.5x38x10.5
HTHC1W-24/200	24-27	200	10000	150	65	540	4.5	

24-27kV

Type	Rated voltage (kV)	Rated current (A)	Breaking current (kA)	Impulse voltage (kV)	Power -frequency withstand voltage(kV)	Creepage distance (mm)	Weight (kg)	Dimension (cm)
HTHC1W-27/100	24-27	100	8000	150	65	540	4.2	51.5x38x11.5
HTHC1W-27/200	24-27	200	10000	150	65	540	4.7	

27-30kV

Type	Rated voltage (kV)	Rated current (A)	Breaking current (kA)	Impulse voltage (kV)	Power -frequency withstand voltage(kV)	Creepage distance (mm)	Weight (kg)	Dimension (cm)
HTHC1-27/100	27-30	100	8000	150	65	600	4.0	53.5x37.5x10
HTHC1-27/200	27-30	200	10000	150	65	600	4.5	

30-33kV

Type	Rated voltage (kV)	Rated current (A)	Breaking current (kA)	Impulse voltage (kV)	Power -frequency withstand voltage(kV)	Creepage distance (mm)	Weight (kg)	Dimension (cm)
HTHC1-30/100	30-33	100	8000	170	70	670	4.3	55.5x37.5x12.5
HTHC1-30/200	30-33	200	10000	170	70	670	4.5	

33-36kV

Type	Rated voltage (kV)	Rated current (A)	Breaking current (kA)	Impulse voltage (kV)	Power -frequency withstand voltage(kV)	Creepage distance (mm)	Weight (kg)	Dimension (cm)
HTHC1W-33/100	33-36	100	8000	170	70	740	4.4	61.5x38x11.5
HTHC1W-33/200	33-36	200	10000	170	70	740	4.8	

33-36kV

Type	Rated voltage (kV)	Rated current (A)	Breaking current (kA)	Impulse voltage (kV)	Power -frequency withstand voltage(kV)	Creepage distance (mm)	Weight (kg)	Dimension (cm)
HTHC1-36/100	33-36	100	8000	180	75	880	4.8	67.5x38x12.5
HTHC1-36/200	33-36	200	10000	180	75	880	5.0	

12-15kV

Type	Rated voltage (kV)	Rated current (A)	Breaking current (kA)	Impulse voltage (kV)	Power -frequency withstand voltage(kV)	Creepage distance (mm)	Weight (kg)	Dimension (cm)
HTHC1W-12F/100	12-15	100	8000	110	40	250	7.3	45x34x11
HTHC1W-12F/200	12-15	200	10000	110	40	250	7.5	

15-24kV

Type	Rated voltage (kV)	Rated current (A)	Breaking current (kA)	Impulse voltage (kV)	Power -frequency withstand voltage(kV)	Creepage distance (mm)	Weight (kg)	Dimension (cm)
HTHC1-15F/100	15-24	100	8000	125	45	350	8.1	55x36x11.5
HTHC1-15F/200	15-24	200	10000	125	45	350	8.6	

24-27kV

Type	Rated voltage (kV)	Rated current (A)	Breaking current (kA)	Impulse voltage (kV)	Power -frequency withstand voltage(kV)	Creepage distance (mm)	Weight (kg)	Dimension (cm)
HTHC1-24F/100	24-27	100	8000	150	65	540	11.0	55x38x15.5
HTHC1-24F/200	24-27	200	10000	150	65	540	11.2	

33-36kV

Type	Rated voltage (kV)	Rated current (A)	Breaking current (kA)	Impulse voltage (kV)	Power -frequency withstand voltage(kV)	Creepage distance (mm)	Weight (kg)	Dimension (cm)
HTHCG1W-33F/100	33-36	100	8000	170	70	720	13.2	66x38x15.3
HTHCG1W-33F/200	33-36	200	10000	170	70	720	13.7	

33-36kV

Type	Rated voltage (kV)	Rated current (A)	Breaking current (kA)	Impulse voltage (kV)	Power -frequency withstand voltage(kV)	Creepage distance (mm)	Weight (kg)	Dimension (cm)
ASCG1-33/100	33-36	100	8000	170	70	820	27.5	68x17x15
ASCG1-33/200	33-36	200	10000	170	70	820	27.5	

33-36kV

Type	Rated voltage (kV)	Rated current (A)	Breaking current (kA)	Impulse voltage (kV)	Power -frequency withstand voltage(kV)	Creepage distance (mm)	Weight (kg)	Dimension (cm)
HTHCG1W-33/100	33-36	100	8000	170	70	1080	14.5	68x17x15
HTHCG1W-33/200	33-36	200	10000	170	70	1080	15.0	

27-33kV

Type	Rated voltage (kV)	Rated current (A)	Breaking current (kA)	Impulse voltage (kV)	Power -frequency withstand voltage(kV)	Creepage distance (mm)	Weight (kg)	Dimension (cm)
HTHC5W-27/100	27-33	100	8000	200	81	1130	7.5	70x65x17
HTHC5W-27/200	27-33	200	10000	200	81	1130	7.5	

33-36kV

Type	Rated voltage (kV)	Rated current (A)	Breaking current (kA)	Impulse voltage (kV)	Power -frequency withstand voltage(kV)	Creepage distance (mm)	Weight (kg)	Dimension (cm)
ASC2A-36/100	33-36	100	10000	170	70	660	13.5	71x35x13.5
ASC2A-36/200	33-36	200	12500	170	70	660	14.2	

Drop-out fuse accessories

RW3-12 Ordinary type

RW7-12 Ordinary type

RW10-12 Ordinary type

RW10-12F Load type

RW11-12 Ordinary type

RW11-12F Load type

PRWG1-12 Ordinary type

PRWG1-12F Load type

ASC1, ASC3, ASC4 Ordinary type

ASC1-□F, ASC4-□F,ASC3-□F
Load type

ASC2 Ordinary type

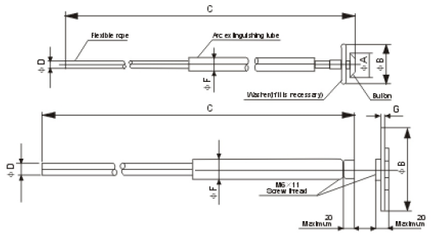
ASC2-□F Load type

◆ Main technical parameters

Type	Rated voltage (kV)	Rated current (A)	Member length (mm)	Fusion tube color	Remarks
RW3	12	100(200)	285	Yellow	Porcelain insulator and silicone rubber insulator have the same length of fuse pipe
RW4	12	100(200)	295	Yellow	
RW5	40.5	100(200)	610	Yellow	
RW7	12	100(200)	295	Yellow	
RW10	12	100(200)	310	Yellow	Porcelain insulator and silicone rubber insulator, common type and load type fuse pipe have the same length.
RW11	12	100(200)	310	Yellow	
PRWG1	12	100(200)	375	Yellow	
PRWG2	40.5	100(200)	700	Yellow	Porcelain insulator and silicone rubber insulator have the same length of fuse pipe
ASC1 ASC4	12~15	100(200)	260	Grey	Porcelain insulator and silicone rubber insulator, common type and load type fuse pipe have the same length.
	15~24	100(200)	350	Grey	
	24~27	100(200)	350	Grey	
	30~33	100(200)	445	Grey	
	33~36	100(200)	510	Grey	
ASC2	12~15	100(200)	300	Grey	
	15~24	100(200)	375	Grey	
	24~27	100(200)	385	Grey	
	30~33	100(200)	485	Grey	
	33~36	100(200)	540	Grey	
ASC3	12~15	100(200)	260	Grey	
	15~24	100(200)	350	Grey	
	24~27	100(200)	350	Grey	
	30~33	100(200)	450	Grey	
	33~36	100(200)	500	Grey	

Note: The length of the melt can be customized as required.

Fuse link



◆ General

"KB, KU, KS" type fuse link belong to "K" and "T" type fuses, it has general type, universal type and screw type available according to IEC-282 standard. The product drop-out type fuse of 11~36V grade.

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

High-voltage limit-current fuse for protecting voltage mutual conductor

◆ Application

This product can be used in indoor system of AC 50Hz and rated voltage of 3.6-40.5kV to protect the voltage mutual-inductor from overlading and circuit break. (Tested by Nation High-voltage Quality Supervising and Testing Center, in accordance of BG15166.2 and IEC282-1).

◆ Model description

X R N P □ - 12 / □ - 50

- Rated breaking current(kA)
- Rated current(A)
- Rated voltage(kV)
- Design sequence number
- For voltage matual-inductor protection purpose
- Indoor use
- Fuse
- Current limiting

◆ Basic parameters

Type	Rated voltage (kV)	Rated current (A)	Breaking current (kA)
XRNP1-12/50	12(10)	0.2,0.5,1,2,3.15	50
XRNP1-24/50	24(20)	0.2,0.5,1,2,3.15	50
XRNP1-40.5/50	40.5(35)	0.2,0.5,1,2,3.15	50

High-voltage limit-current fuse for protecting (Germany Din Standard)voltage transformer

◆ Application

It can be used indoor system of 50Hz and rated voltage of 3.6kV, 7.2kV, 24kV, 40.5kV. Used together with other switch facilities such as loading switches, vacuum contactors, it can protects electric transformers and other electric facilities against over loading or circuit break. It is also a necessary accessory for high-voltage switch box, circular circuit cabinet, high/low voltage top loading transformer substation.

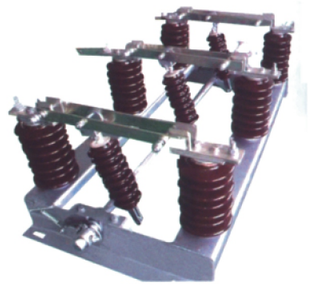
◆ Basic parameters

Type	Rated voltage (kV)	Rated current of the fuse(A)	Rated current of the limit(A)
XRNTI-12	12	40	3.15,6.3,10,16,20,25,31.5,40
XRNTI-12	12	100	50,63,71,80,100,125
XRNTI-12	12	125	160,200,250,315
XRNTI-24	24	200	3.15,6.3,10,16,20,25,31.5,40,50,63, 80,100,125,160,200
XRNTI-40.5	40.5	125	3.15,6.3,10,16,20,25,31.5,40,50,63

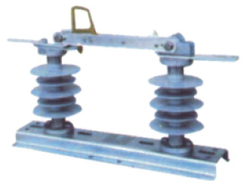
Export type

ASC1A-12

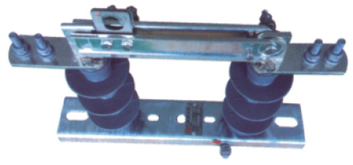
ASC2A-36



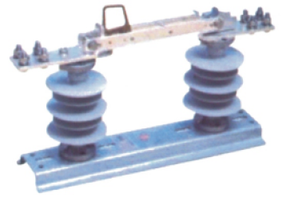
GW1B-12 Export type



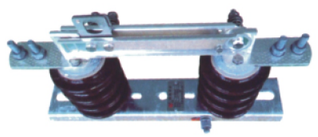
HGW9D-12



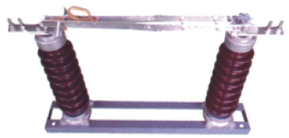
HGW9C-12



GW9D-12/1250



GW9C-12



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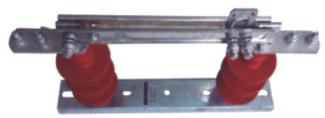

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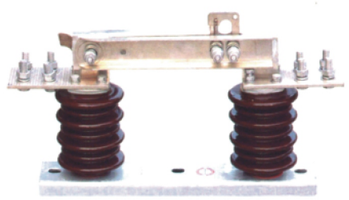
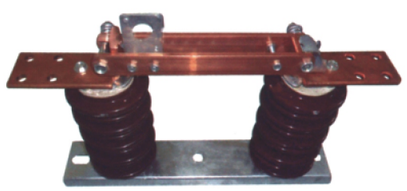
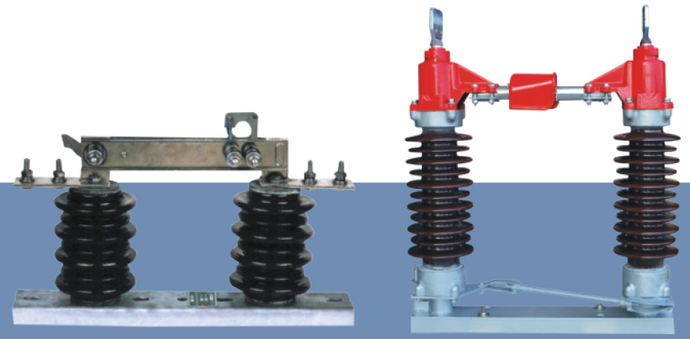


GW9A-12/1250



GW9-12/1250



DISCONNECTING SWITCH SERIES

YUEQING AISO ELECTRIC CO.,LTD.
www.aisoelectric.com

Disconnecting switch

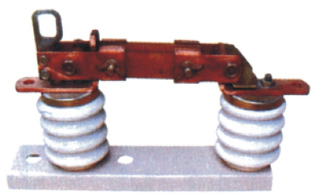
◆ Application

The JDW, HRW, GW, HR series outdoor low voltage disconnecting switch is the low voltage switch equipment of single phase AC50Hz. The products is used for power transformer outgoing, sub-feeder in the network, it is the newest product of fuse-cutout. It can open and close in over head circuit and power transformer under the special condition, the disconnecting switch can low down the power-off area, ensure the security of maintenance man, improve the reliability of power supply.

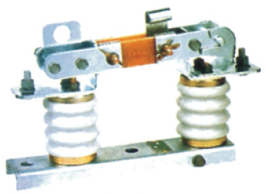
◆ Normal service conditions

1. The altitude does not exceed 1000m.
2. The ambient air temperature: Maximum +40℃; Minimum: -30℃; Paramos-40℃.
3. The wind pressure does not exceed 700Pa. (corresponding to 34m/s wind speed).
4. The earthquake intensity does not exceed 8 degrees.
5. The working situation hasn't 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 explosive and corrosive maters that affect seriously insulation and conduction capability of the isolator.
7. Pollution-proof type isolator is applying to severe filthy conduction area; however, it shouldn't be any explosive matters and matters causing fire.

Outdoor low-voltage disconnecting swtich



JDW1-0.5



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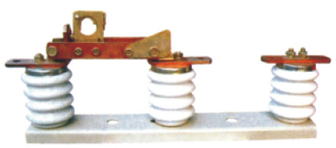

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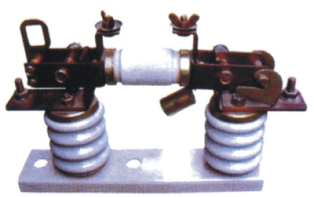

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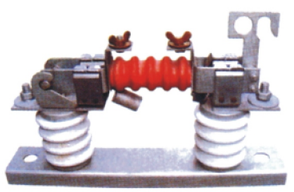
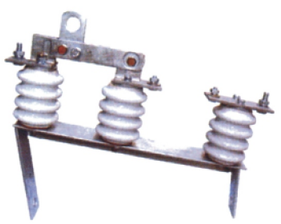
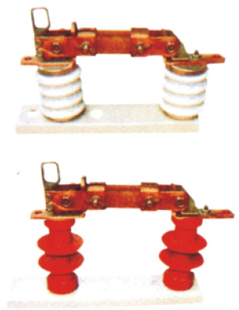


JDW5-0.5



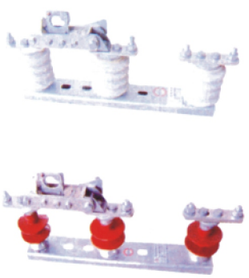
GWR1-0.5

JDW series outdoor low-voltage disconnecting switch



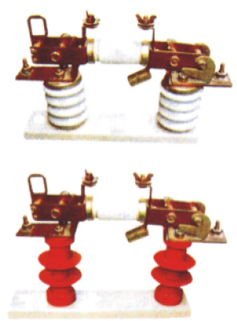
Type	Rated voltage (kV)	Rated current (A)	4s heat steady current (A)	Shock current (A)	Lightning impulse withstand voltage(kV)		Power-frequency withstand voltage(kV)	
					Relatively earth	Between fracture	Relatively earth	Between fracture
JDW1-0.5/400	0.5	400	12500	31500	4	5	2	3
JDW1-0.5/630		630						
JDW1-0.5/800		800						
HJDW1-0.5/400		400						
HJDW1-0.5/630		630						
HJDW1-0.5/800		800						

Type	Rated voltage (kV)	Rated current (A)	4s heat steady current (A)	Shock current (A)	Lightning impulse withstand voltage(kV)		Power-frequency withstand voltage(kV)	
					Relatively earth	Between fracture	Relatively earth	Between fracture
JDW2-0.5/400	0.5	400	12500	31500	4	5	2	3
JDW2-0.5/630		630						
JDW2-0.5/800		800						
HJDW2-0.5/400		400						
HJDW2-0.5/630		630						
HJDW2-0.5/800		800						

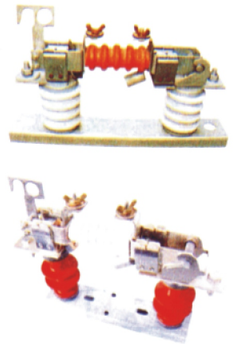


Type	Rated voltage (kV)	Rated current (A)	4s heat steady current (A)	Shock current (A)	Lightning impulse withstand voltage(kV)		Power-frequency withstand voltage(kV)	
					Relatively earth	Between fracture	Relatively earth	Between fracture
JDW3-0.5/400	0.5	400	12500	31500	4	5	2	3
JDW3-0.5/630		630						
JDW3-0.5/800		800						
HJDW3-0.5/400		400						
HJDW3-0.5/630		630						
HJDW3-0.5/800		800						

JDW, HRW series outdoor low-voltage disconnecting switch



Type	Rated voltage (kV)	Rated current (A)	4s heat steady current (A)	Shock current (A)	Lightning impulse withstand voltage(kV)		Power-frequency withstand voltage(kV)	
					Relatively earth	Between fracture	Relatively earth	Between fracture
JDW4-0.5/400	0.5	400	12500	31500	4	5	2	3
JDW4-0.5/630		630						
JDW4-0.5/800		800						
HJDW4-0.5/400		400						
HJDW4-0.5/630		630						
HJDW4-0.5/800		800						



Type	Rated voltage (kV)	Rated current (A)	4s heat steady current (A)	Shock current (A)	Lightning impulse withstand voltage(kV)		Power-frequency withstand voltage(kV)	
					Relatively earth	Between fracture	Relatively earth	Between fracture
JDW5-0.5/400	0.5	400	12500	31500	4	5	2	3
JDW5-0.5/630		630						
JDW5-0.5/800		800						
HJDW5-0.5/400		400						
HJDW5-0.5/630		630						
HJDW5-0.5/800		800						

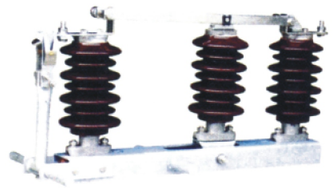
Type	Rated voltage (kV)	Rated current (A)	4s heat steady current (A)	Shock current (A)	Lightning impulse withstand voltage(kV)		Power-frequency withstand voltage(kV)	
					Relatively earth	Between fracture	Relatively earth	Between fracture
HRW-0.5/400	0.5	400	12500	31500	4	5	2	3
HRW-0.5/630		630						
HRW-0.5/800		800						
FHRW-0.5/400		400						
FHRW-0.5/630		630						
FHRW-0.5/800		800						

Type	Rated voltage (kV)	Rated current (A)	4s heat steady current (A)	Shock current (A)	Lightning impulse withstand voltage(kV)		Power-frequency withstand voltage(kV)	
					Relatively earth	Between fracture	Relatively earth	Between fracture
GWR1-0.5/400	0.5	400	12500	31500	4	5	2	3
GWR1-0.5/630		630						
GWR1-0.5/800		800						
HGWR1-0.5/400		400						
HGWR1-0.5/630		630						
HGWR1-0.5/800		800						

Type	Rated voltage (kV)	Rated current (A)	4s heat steady current (A)	Shock current (A)	Lightning impulse withstand voltage(kV)		Power-frequency withstand voltage(kV)	
					Relatively earth	Between fracture	Relatively earth	Between fracture
HRW2-0.5/400	0.5	400	12500	31500	4	5	2	3
HRW2-0.5/630		630						
HRW2-0.5/800		800						
FHRW2-0.5/400		400						
FHRW2-0.5/630		630						
FHRW2-0.5/800		800						

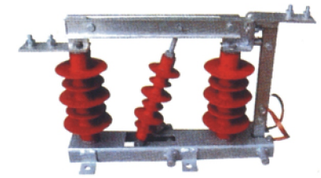
Type	Rated voltage (kV)	Rated current (A)	4s heat steady current (A)	Shock current (A)	Lightning impulse withstand voltage(kV)		Power-frequency withstand voltage(kV)	
					Relatively earth	Between fracture	Relatively earth	Between fracture
HR20-0.5/400	0.5	400	12500	31500	4	5	2	3
HR20-0.5/630		630						
HR20-0.5/800		800						
FHR20-0.5/400		400						
FHR20-0.5/630		630						
FHR20-0.5/800		800						

GW1 series outdoor high-voltage disconnecting switch



GW1-12D

GW1A-12 New type



HGW1A-12D New type

◆ Application

GW1 series outdoor high voltage disconnecting switch are high voltage switchgears of monopole structure and be applied for the connection and disconnection of circuit under voltage without loading. Knife switch with earthing with CS mould manual operating mechanism can prevent disoperation such as switching in etc. on line earthing wires and earthing wires. And the operating staff needs not to make additional suspension of earthing wires. The pollution resistance type outdoor high voltage isolator can meet the demands of clients for heavily polluted areas and can make effective solutions on the pollution flashover during the operation of disconnecting switches.

◆ Model description

G W 1 - 12 G (D) / □ - □

- Rated short time withstand current(kA)
- Rated current(A)
- Earthing device
- Plateau type
- Rated voltage(kV)
- Design serial number
- Outdoor device
- Disconnecting switch

◆ Normal service conditions

1. The altitude does not exceed 1000m.
2. The ambient air temperature: Maximum +40℃; Minimum: -30℃; Paramos -40℃.
3. The wind pressure does not exceed 700Pa. (Corresponding to 34m/s wind speed).
4. The earthquake intensity does not exceed 8 degrees.
5. The working situation has not 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 explosive and corrosive maters that affect seriously insulation and conduction capability of the isolator.
7. Pollution-proof type isolator is applying to severe filthy conduction area; however, it should not be any explosive matters and matters causing fire.

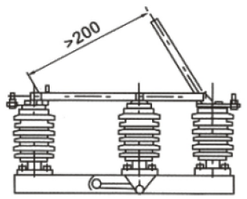
Main technical parameters

Item	Unit	Parameter	Remark
Rated voltage	kV	12/17.5/24	
Rated current	A	630/1250	
Rated peak withstand current	kA	50/100	The earthing switch is the same with the main switch
Rated short time withstand current	kA/4s	20/40	

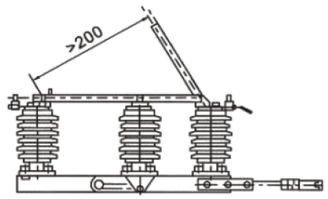
Models and specifications

Type of structure \ Current grade / Models	630A	1250A
Without earthing	GW1-12/630	GW1-12/1250
Earthing with moving contact	GW1-12(D1)/630	GW1-12(D1)/1250
Earthing with fixed contact	GW1-12(D2)/630	GW1-12(D2)/1250

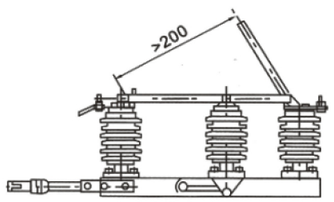
Overall and installation dimension



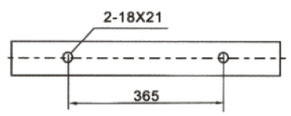
GW1-12



GW1-12(D1)



GW1-12(D2)

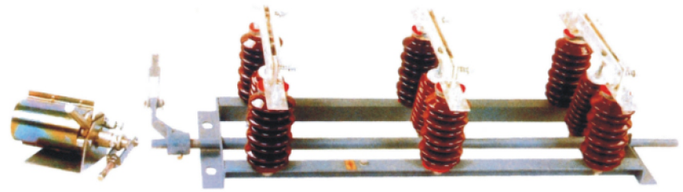


Mounting hole size

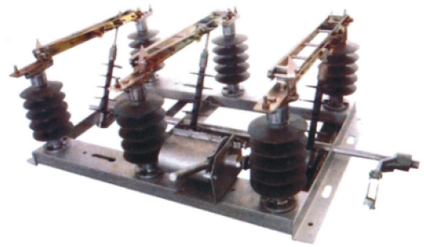
Order notice

When you order this products, please indicate the models, rated voltage and rated current rate thermal stability current of products, whether earthing device is needed and the installation method if the device etc. If you have any other requirement please contact with us.

GW1A-12(24)(D)LT Outdoor high-voltage disconnecting switch (combined type)



GW1A-12(D)LT



HGW1-12(D)LT

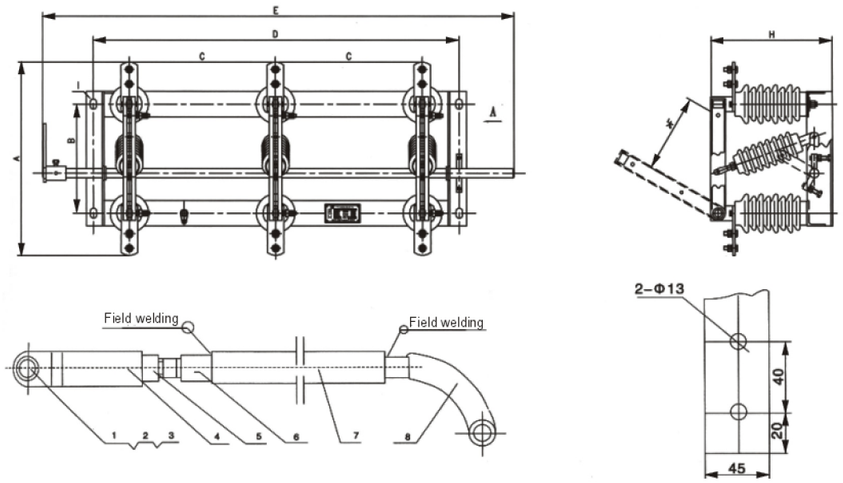
Main technical parameters of GW1A

Item			Unit	Parameters			
Rated voltage			kV	10	15	20	
Max. Operating voltage			kV	12	17.5	24	
Rated insulation level	1min power frequency withstand voltage (effective value)	To earth	kV	38	40	50	
		Across open DS	kV	42	47	60	
	Rated lightning impulse withstand voltage(peak)	To earth	kV	75	105	125	
		Across open DS	kV	85	120	145	
Rated frequency			Hz	50			
Rated current			A	200	400	630	1250
4s thermally stable current (effective value)			kA	6.3	12.5	20	31.5
Dynamic stable current(peak)			kA	16	31.5	50	80
Mechanism supplied for disconnector				CS8-1、CS8-D、CS8-IID Rain type manual mechanism or CJ35 motor drive mechanism			

Main technical parameters of HGW1

Item			Unit	Parameters			
Rated voltage			kV	10	24	33	
Max. Operating voltage			kV	12	27	35	
Rated insulation level	1min power frequency withstand voltage	To earth	kV	40	50	80	
		Across open DS	kV	47	60	80	
	Rated lightning impulse withstand voltage(peak)	To earth	kV	105	125	180	
		Across open DS	kV	120	145	210	
Rated frequency			Hz	50			
Rated current			A	200	400	630	1250
4s thermally stable current (effective value)			kA	6.3	12.5	20	31.5
Dynamic stable current(peak)			kA	16	31.5	50	80
Mechanism supplied for disconnector				CS8-1、CS8-D、CS8-IID Rain type manual mechanism or CJ35 motor drive mechanism			

Overall and installation dimension

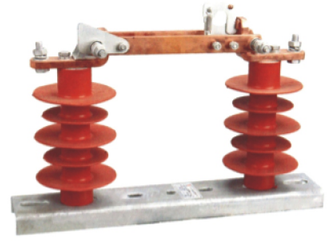


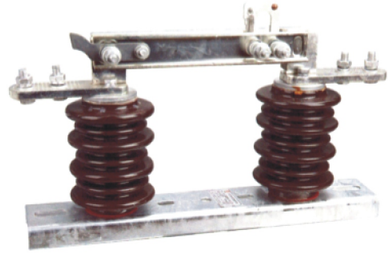
Connect pole
1. Φ 12 spindle
2. Washer M12
3. Open bolts
4. Bending coupling
5.M16 nut
6. Pole
7. 3/4" water gas pipe
8. Connect pole and head

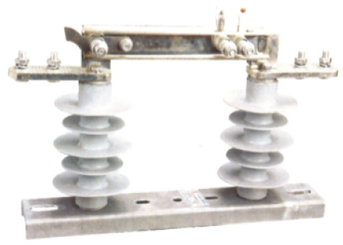
Type	A	B	C	D	E	F	H	I
GW1A-12	530	300	400	1000	1300	200	330	4-18x24
GW1A-24	630	400	600	1400	1700	300	430	4-18x24

GW9 series outdoor high-voltage disconnecting switch


GW9-12


HGW9-12


GW9A-12 New type


HGW9A-12 New type

Application

The GW9-12 outdoor high voltage disconnecting switch is the high voltage switch equipment of single phase AC 50Hz. The product is suitable for power system with rated voltage 10kV to make or break power supply under circumstances of with voltage and no load. The switch is adopts isolated hook rod to operate.

Model description

H G W 9 - □ □ / □

- Rated current(A)
- "D" : Earthing device
- "W": Pollution resistance type "
- Rated voltage(kV)
- Design serial number
- "W": Outdoor contrivance
- "G": Disconnecting switch
- "H": Composite insulator type
- "F": Epoxy resin
- High strength ceramics can not say

◆ Normal service conditions

a. The altitude does not exceed 1000m.
b. The ambient air temperature: Maximum+40℃; Minimum: -30℃; Paramos-40℃.
c. The wind pressure does not exceed 700Pa. (corresponding t0 34m/s wind speed).
d. The earthquake intensity does not exceed 8 degrees.
e. The working situation hasn't frequent violent vibration.
f. 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 maters that affect seriously insulation and conduction capability of the isolator.
g. Pollution-oroof type isolator is applying to severe filthy conduction area; however, it shouldn't be any explosive matters and matters causing fire.

◆ Main technical parameters of GW9-12W/HGW9-12W

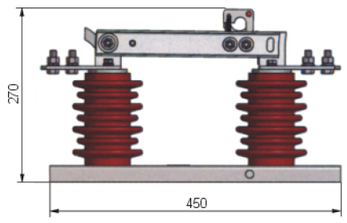
Type	Rated voltage (kV)	Rated current (A)	Limit passing current(kA)		10s thermal stable current(kA)
			Peak value	Effective value(r.m.s)	
(H)GW9-10W (H)GW9-12W (H)GW9-15W	10,12,15	200	5	9	5
		400	21	15	10
		630	35	25	14
		1000	50	35	20

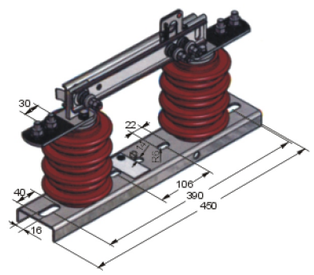
◆ Main technical parameters of GW9A-12/HGW9A-12

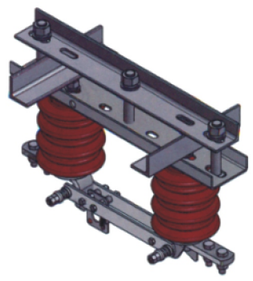
Type	Rated voltage (kV)	Rated current (A)	4s thermal stable current(kA)	Lightning impulse withstand voltage(kV)		Power frequency withstand voltage(kV)	
				To earth	Across the isolating distance	To earth	Across the isolating distance
GW9A-12/400	12-15	400	20000	75	85	42	48
GW9A-12/630	12-15	630	25000	75	85	42	48
HGW9A-12/400	12-15	400	20000	75	85	42	48
HGW9A-12/630	12-15	630	25000	75	85	42	48

◆ Overall and installation dimension

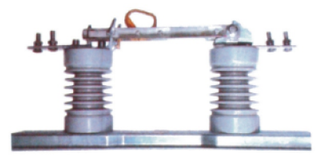
The disconnecting switch can be installed vertically or slant, please see figure for overall and installation dimension.



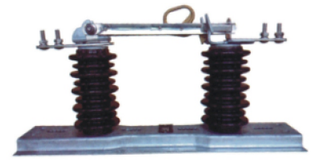




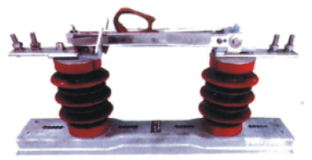
GW9B-12 Loading disconnecting switch



FGW9B-12 Load type



GW9B-12 Load type



HGW9B-12 Load type

◆ Application

The GW9B-12 0utdoor high voltage disconnecting switch is the high voltage switch equipment. The product is suitable for power system with rated voltage 10kV to make or break power supply under circumstances of with voltage and no load. When our disconnect switch with load, it must use special hand-held devices to start the load operation

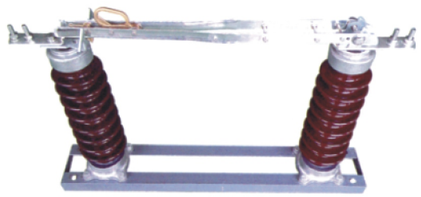
◆ Main technical parameters

Type		Rated voltage (kV)	Rated current (A)	4s thermal stable current(kA)	Lightning impulse withstand voltage(kV)		1min power frequency withstand voltage(kV)	
					To earth	Across the isolating distance	To earth	Across the isolating distance
Plain type (installation site elevation not exceeding 2000m)	(F)GW9B-12/400	12	400	12.5	75	85	42	48
	(F)GW9B-12/630	12	630	20	75	85	42	48
	(F)GW9B-12/900	12	900	25	75	85	42	48
	(F)GW9B-12/1250	12	1250	40	75	85	42	48
Plateau type (installation site elevation not exceeding 2000 -3000m)	(F)GW9B-15/400	12	400	12.5	110	125	47	54
	(F)GW9B-15/630	12	630	20	110	125	47	54
	(F)GW9B-15/900	12	900	25	110	125	47	54
	(F)GW9B-15/1250	12	1250	40	110	125	47	54
Plain type (installation site elevation not exceeding 2000m)	(F)GW9B-40.5/400	40.5	400	12.5	185	215	95	118
	(F)GW9B-40.5/630	40.5	630	20	185	215	95	118
	(F)GW9B-40.5/900	40.5	900	25	185	215	95	118
	(F)GW9B-40.5/1250	40.5	1250	40	185	215	95	118

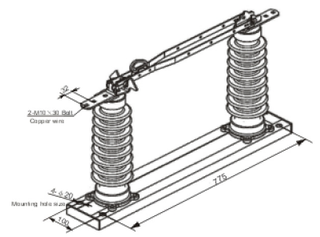
Note: 4000m above sea level or higher, please consult with the manufacturer.

◆ Overall and installation dimension

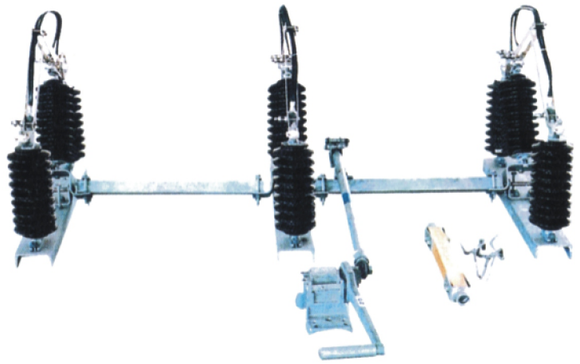
The disconnecting switch can be installed vertically or slant, please see figure for overall and installation dimension.



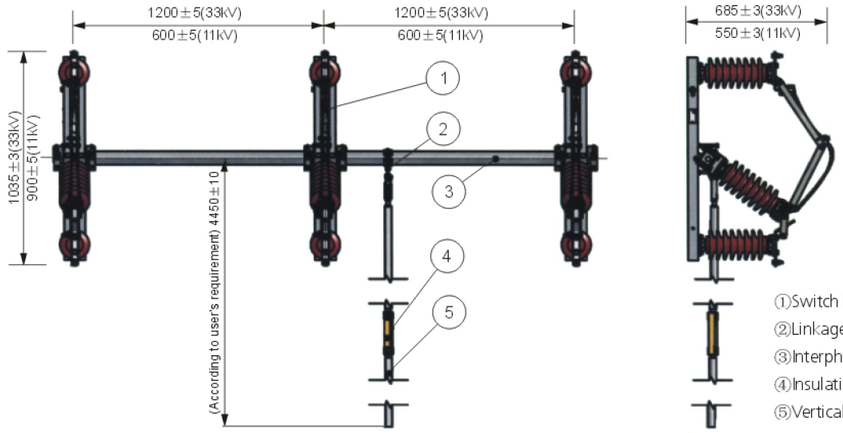
GW9B-40.5



RH-B series high-voltage disconnecting switch



◆ Overall and installation dimension

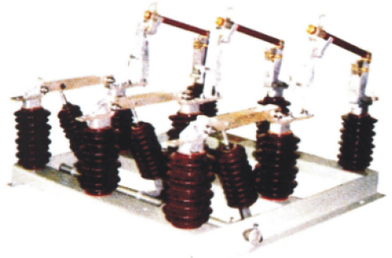


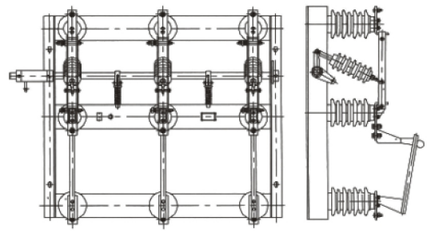
①Switch body
②Linkage crank arm
③Interphase connecting rod
④Insulating tie rod
⑤Vertical connecting rod

◆ Main technical parameters

Type	Rated voltage (kV)	Rated current (A)	4s thermal stable current(A)	Dynamic stable current (A)	Lightning impulse withstand voltage(kV)		Power frequency withstand voltage(kV)	
					To earth	Across the isolating distance	To earth	Across the isolating distance
RH-B	11	400	12500	31500	75	95	38	42
	11	630	20000	40000				
	33	400	12500	31500	170	195	70	80
	33	630	20000	40000				

GWR□ Outdoor AC high-voltage disconnecting switch(export type)

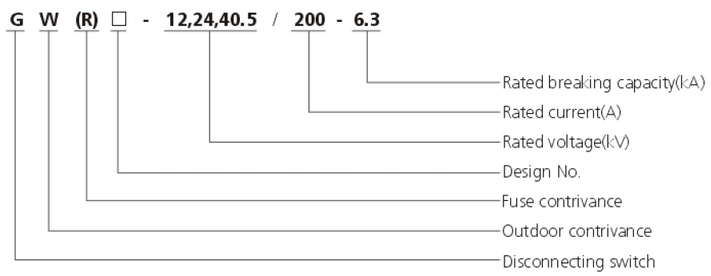




◆ Application

GWR□-12/24/40.5-100 0utdoor AC high voltage fused type disconnecting switch (disconnect switch for short) is sued in electric power system with rated frequency 50/60Hz, rated voltage 12(40.5)kV. Its main for making or breaking circuit under line supplying voltage in outdoor high voltage distribution system equipments. (Thereof anti-pollution type disconnect switch especial used in serious polluted area.)

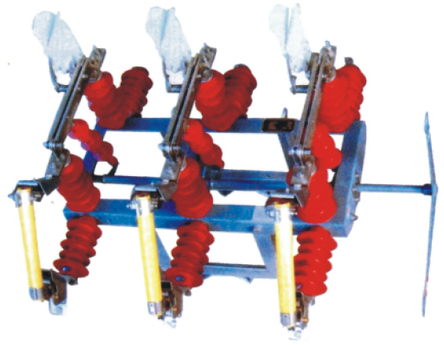
◆ Model description



◆ Normal service conditions

a. The ambient air temperatures : -40℃ ~ +40℃;
b. The altitude above sea level: 1000m ;
c. Wind speed does not exceed 30m/s;
d. The earthquake intensity does not exceed 8 degrees;
e. The installation situation shall be without frequent violent vibration;
f. The switch shall be kept away from flammability, explosive hazard, chemical corrosion and serious filth.

GW(F)□-12R/200-6.3 series outdoor high-voltage disconnecting switch



◆ Application

GW(F)□ -12R/200-6.3 series outdoor high voltage disconnecting switch is coordinated type construction of 3 poles, which is adapted to the power system of AC 50Hz,rated voltage 12kV for protecting short circuit and overload of the carrying line and transformer, furthermore, can be operated with load. To meet different demands of the consumer, a zinc of lightning arrester is assembled. The switch has the capacity of breaking load current and the function of protecting short circuit, meanwhile, has obvious isolate breaking distance, easy construction, suitable fabrication, reliable action.

◆ Model description

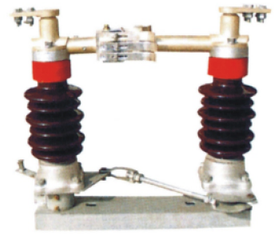
G W (F) □ - 12,24,40.5 R / 200 - 6.3

- 6.3 — Rated breaking capacity(kA)
- 200 — Rated current(A)
- R — Fuse contrivance
- 12,24,40.5 — Rated voltage(kV)
- □ — Design serial number
- (F) — Load operation
- W — Outdoor contrivance
- G — Disconnecting switch

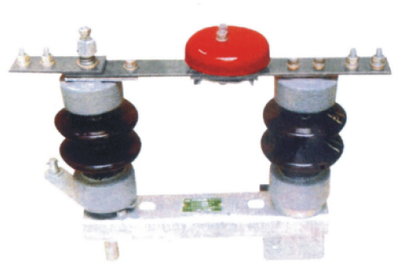
◆ Normal service conditions

a. The ambient air temperatures : -40℃ ~ +40℃;
b. The altitude above sea level: 1000m ;
c. Wind speed does not exceed 30m/s;
d. The earthquake intensity does not exceed 8 degrees;
e. The installation situation shall be without frequent violent vibration;
f. The switch shall be kept away from flammability, explosive hazard, chemical corrosion and serious filth.

GW4 Outdoor high-voltage disconnecting switch



GW4A-15



GW4-12

◆ Application

GW4 outdoor AC high voltage disconnecting switch is a two-column three-phase AC 50Hz outdoor high voltage switchgear for power system voltage 10-220kV, the supply voltage at no load for hours together circuits, as well as being on the high voltage bus overhaul , circuit breakers and other electrical equipment and charged high voltage lines for circuit isolation. Pollution prevention isolating switch which can meet the requirements of users in the region re-contamination, and can effectively address the isolation switch in the operation of the flashover problem.

Disconnecting switch is open double-column horizontal type, the composition of each single stage by the dock, post insulators, outlet and contact other parts of the seat, the two pillars of the insulating porcelain mounted parallel to each other on both ends of the bearing base, and the base vertical . Leading electrical part were installed in the two pillars above the porcelain insulator, porcelain insulator with pillars d0 90 。 rotation.

Each bearing has a built-in isolation switch shaft assembly, the assembly between the two axes by connecting plates, screws and other connecting the drive to adjust.

Refers to the middle portion of the contact pairs of the contact assembly, using self-elastic contact finger in the form of roll-in, in order to reduce opening and closing the contacts and the contact fingers of wear and improve life.

Disconnectors with earthing switch, fan-shaped plate leading electrical circuit and grounding switch and interlock with the base of the curved panels that switch on when leading electrical circuit, grounding switch is not closing, when the grounding switch is closed, the leading electrical circuit can not be closed. Chain plate chain disconnectors and earthing switches on the realization by the agency when equipped with CS8-6D.

◆ Model description

G W 4 - 12,17.5,40.5,126 D / 630 - □

- □ — Rated short time withstand current(kA)
- 630 — Rated current(A)
- D — Earthing device
- 12,17.5,40.5,126 — Rated voltage(kV)
- 4 — Design serial number
- W — Outdoor device
- G — Disconnecting switch

Product features

Disconnecting switch with double column, contact into open type structure, has the ability of self cleaning contact, improve the contact reliability.

Finger made of new material with high strength, high conductivity, high elastic. Relying on the elastic contact finger clamping itself, to avoid the spring corrosion, contact clamping fever caused by annealing.

Force to reduce the contact resistance increases, the contact heat intensified the vicious spiral.

The rotating part according to the design requirements of the isolating switch maintenance free. The rotating seat designed seal structure, moisture, dust and harmful gas can not enter, bearing, molybdenum disulfide lithium base grease will never work in.

A good environment, bearing, never rust, grease can not be lost, never dry up, the disconnecting switch operating torque will increase after long term operation. Stainless steel shaft and oil-free self-lubricating bearing

With the structure of steel by hot dip galvanizing, ensure the disconnecting switch operation is flexible, portable and reliable, never rust.

Main technical parameters

Item			Unit	Parameters					
Rated voltage			kV	10		15		24	
Max. Operating voltage			kV	12		17.5		27	
Rated insulation level	1min power frequency withstand voltage (effective value)	To earth	kV	38		40		50	
		Across open DS	kV	45		47		60	
	Rated lightning impulse withstand voltage(peak)	To earth	kV	75		105		125	
		Across open DS	kV	85		120		145	
Rated frequency			Hz	50					
Rated current			A	200	400	630	1250	1600	2000
Rated short-time withstand current			kA	6.3	12.5	20	31.5	31.5	40
Rated peak withstand current			kA	16	31.5	50	80	80	100
Rated duration of short-circuit			S	4					
Rated mechanical terminal vertical load			N	245					
Mechanism supplied for disconnector				CS11-1、CS11、CS8-6D manual mechanism or CJ11A-G motor drive mechanism					
Earthing switch rated parameter for disconnector assembling				Earthing switch use for cutting off the residual current, the dynamic and thermal current without examination					

Normal service conditions

a. Altitude: 1,000-2,000m.
b. Ambient temperature: no more than 40℃ and no less than-30℃ (no less than -40℃ in alpine areas).
c. Wind pressure: ⩽ 700Pa(equaling wind velocity of 34m/s).
d. Earthquake intensity: ⩽ 8.
e. Ice thickness: ⩽ 10mm.
f. The installation location shall be free from flammable, explosive dangerous articles, chemical corrosion and fierce vibration.
g. The pollution grade of post insulator: 0 for general type and Ⅱ for pollution resistance type.

GW4(A)-40.5,70.5,126(D)(W) Outdoor high-voltage AC disconnecting switch

HGW4-40.5

GW4-40.5D

GW4-126

Main technical parameters

Item			Unit	Parameters					
Rated voltage			kV	40.5		72.5		126	
Rated insulation level	1min power frequency withstand voltage (effective value)	To earth	kV	95		140		230	
		Across open DS	kV	118		160		265	
	Rated lightning impulse withstand voltage(peak)	To earth	kV	185		325		550	
		Across open DS	kV	215		375		630	
Rated frequency			Hz	50					
Rated current			A	630	1250	1600	2000	3150	4000
Rated short-time withstand current			kA	20	31.5	40	40	50	63
Rated peak withstand current			kA	50	80	100	100	125	160
Rated duration of short-circuit			S	4/2					
Rated mechanical terminal load	Level of vertical load		N	750		1000			
	Level of lateral load		N	500		750			
	Vertical force		N	750		1000			
Creepage distance			mm	1013-1256		1813-2248		3150-3906	
Mechanical life			Times	2000					
Manual operating mechanism	Without earthing			CS14,CS17					
	Single earthing			CS14-D,CS17-D					
	Double earthing			CS14G(F),CS11(F)					
Motor drive mechanism	Type			CJ6					
	Motor voltage		V	AC380					
	Control circuit voltage		V	AC220,DC220,DC220					
	Opening and closing time		s	6±1					
Weight of product (monopole)	Without earthing		kg	360		500		700	
	Single earthing		kg	410		600		800	
	Double earthing		kg	460		700		900	

GW5-40.5,72.5,126 outdoor high-voltage disconnecting switch

GW5-40.5

HGW5-40.5

GW5-126

Application

GW5 series outdoor high voltage disconnecting switch is a three phase AC switching device for 50 to 60Hz high voltage. It is used for breaking the circuit when there is voltage but without load in the power system with the maximum voltage of 40.5kV,72.5kV or 126kV.

According to the usage, the product is divided into ordinary, anti-dirt and special(Z)types. The special type is further divided into three types, which are mounted in a side, up-side-down or inclining way, so the mounting is flexible.

The earthed switching part of the product has two ways of earthing, i.e.single or double earthing. The earthing switch has a structure of type I or type II and the electric parameters of the type II earthing switch has the same short-circuit withstand ability as the disconnecting switch.

The product is provided with a manual or motor operating device and an electromagnetism lock can also be fitted to prevent from wrong operation. The exposed parts are all made of stainless steel or processed with aluminum alloy processing technology or hot-zinc-plating technology to ensure operation with no corrosion for a long period of time, and further ensure the flexibility and reliability of the product, satisfy the requirements in the different areas.

Model description

G W 5 - 40.5,72.5,126 D (W) / 630 - 31.5

- 31.5 — Rated short time withstand current(kA)
- 630 — Rated current(A)
- (W) — Pollution resistance type
- D — Earthing device
- 40.5,72.5,126 — Rated voltage(kV)
- 5 — Design serial number
- W — Outdoor device
- G — Disconnecting switch

Product features

Disconnecting switch with double column, contact into open type structure, has the ability of self cleaning contact, improve the contact reliability;

Finger made of new material with high strength, high conductivity, high elastic. Relying on the elastic contact finger clamping itself, to avoid the spring corrosion, contact clamping fever caused by annealing

Force to reduce the contact resistance increases, the contact heat intensified the vicious spiral.

The rotating part according to the design requirements of the isolating switch maintenance free. The rotating seat designed seal structure, moisture, dust and harmful gas can not enter, bearing, molybdenum disulfide lithium base grease will never work in.

A good environment, bearing, never rust, grease can not be lost, never dry up, the isolation switch operating torque will increase after long term operation. Stainless steel shaft and oil-free self-lubricating bearing.

With the structure of steel by hot dip galvanizing, ensure the isolation switch operation is flexible, portable and reliable, never rust.

Characteristic explanation of perfect disconnecting switch

1. All the hot dip galvanizing process embalmed, can not ensure that they meet the requirements of galvanized rotating parts are generally made of stainless steel, stainless steel fasteners M8 below, the rest are hot dip galvanized.
2. Conductive parts brass soft-linked, among contacts for a "handshake" type of self-type finger spring no current through the external pressure, disconnecting switch only the middle one contact point, the rest were fixed connection with a soft connection.

a. new contact structure, contacts and contact base end fixed contacts by deformation and contact pressure spring produce, so that the end of the finger sliding contact to the fixed contact, to improve the conductivity reliability;

b. finger spring to external, in order to avoid spring diversion;

c. to increase the magnetic lock plate, improve dynamic thermal stability.

3. Turn the department assigned to self-lubricating sleeve, no grease.
4. The main terminals for flat type. When the current level is 630A, tin-plated conductive member; current rating of 1250A-4000A, the silvered surface of the conductive member.
5. Porcelain pieces, hot dip galvanized under the cap and make the region according to different levels of contamination can choose different pieces of porcelain from the climb; the nominal value in the manufacturing process, according to the positive control, a creepage distance design higher than the standard value of the design.
6. The switch post insulator strength density, stable and reliable, high-strength porcelain formulation manufactured, reducing the strength of the product dispersion, increases the tensile strength of the product, the product structure has been designed to use a pre-existing greater strength stay and make the products to ensure stable and reliable in operation.

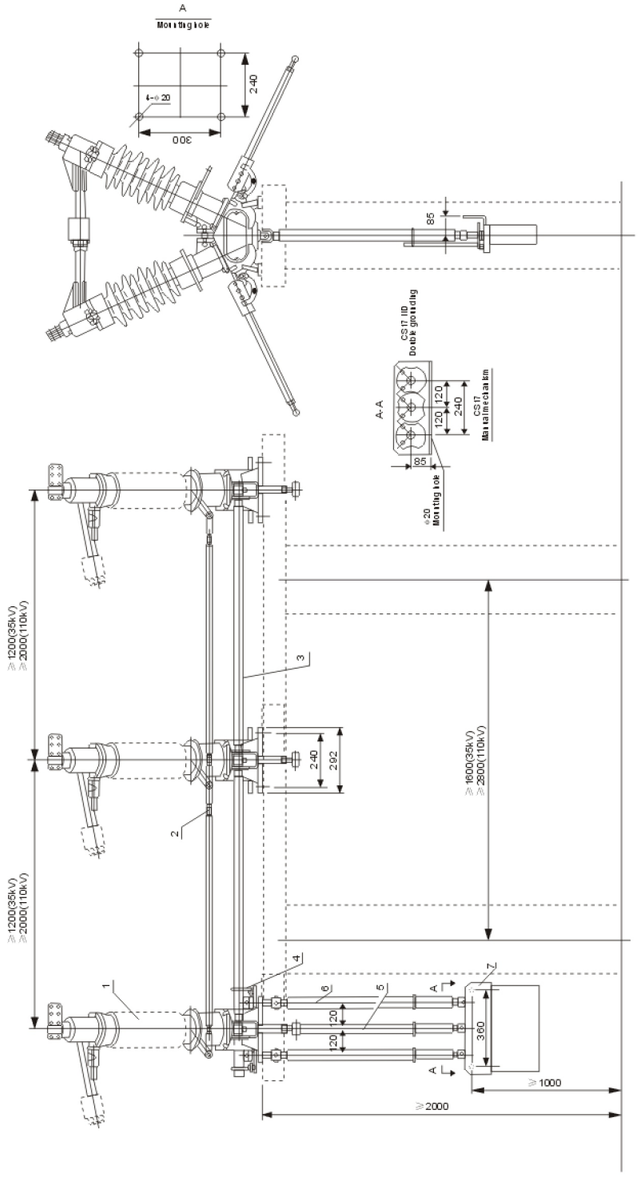
Main technical parameters

Item			Unit	Parameters		
Rated voltage			kV	40.5	72.5	126
Rated insulation level	1min power frequency withstand voltage (effective value)	To earth	kV	95	140	230
		Across open DS	kV	118	160	265
	Rated lightning impulse withstand voltage(peak)	To earth	kV	185	325	550
		Across open DS	kV	215	375	630
Rated frequency			Hz	50		
Rated current			A	630,1250,1600,2000		
Rated short-time withstand current			kA	20,31.5,40,40		
Rated peak withstand current			kA	50,80,100,100		
Rated duration of short-circuit			S	4/2		
Rated mechanical terminal load	Level of vertical load		N	750	1000	
	Level of lateral load		N	500	750	
	Vertical force		N	750	1000	
Creepage distance			mm	1013-1256	1813-2248	3150-3906
Mechanical life			Times	2000		
Manual operating mechanism	Type			CS17,CS17G		
	Control circuit voltage		V	AC220,DC110,DC220		
Motor drive mechanism	Type			CJ6		
	Motor voltage		V	AC380		
	Control circuit voltage		V	AC220,DC220,DC220		
	Opening and closing time		s	6±1		
Weight of product (monopole)	Without earthing		kg	360	500	800
	Single earthing		kg	390	560	900
	Double earthing		kg	430	620	1000

Order notice

When putting the order, please indicate the specifications, models, types (pollution resistance); without earthing, single earthing or dual earthing, electrical control or manual control. Please make compromise settlement with the manufacture on special requirements.

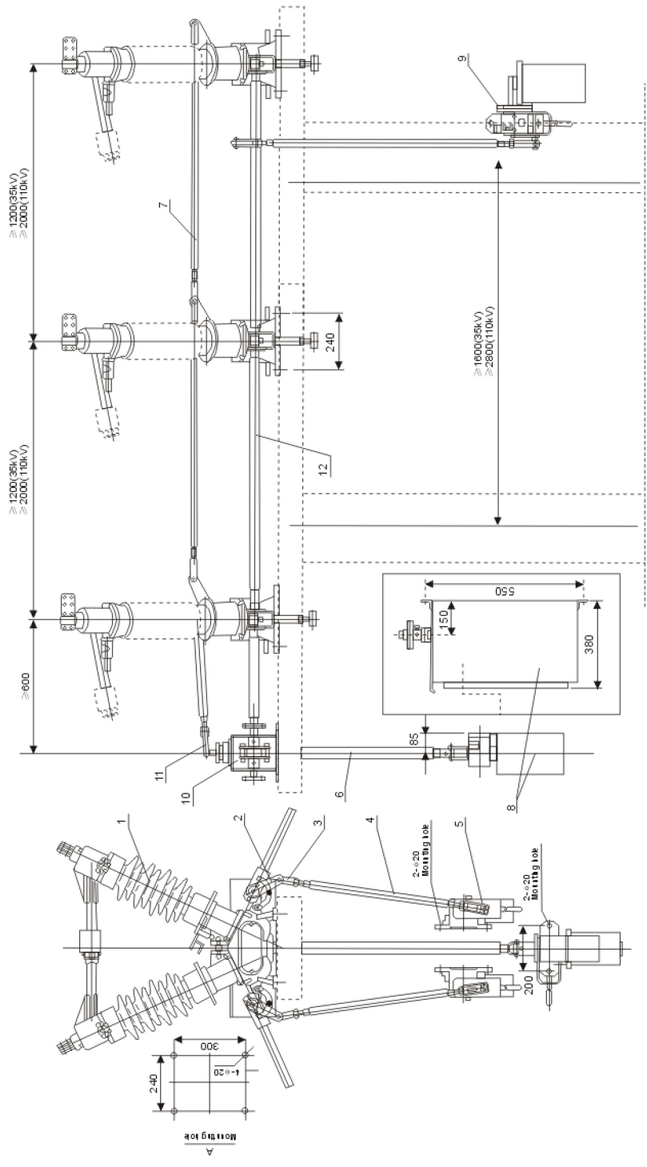
Overall and installation dimension



Connection of Tripole Switch and CS17G Mechanism (Double Grounding Type)

1. Switch 2. Main knife-gate connecting rod (user self provided) 3. Ground knife torsion rod (user self provided)
4. Torsion joint 5. Maneuvering torsion rod (user self provided) 7. CS17 manual mechanism
6. Ground gate tool maneuvering torsion rod (user self provided)

Overall and installation dimension



Connection of Tripole Switch and CS17-G Mechanism (Double Grounding Type)

1. Switch 2. Crank arm 3. Grounding knife connector 4. Grounding knife operating link(user self provided)
5. Manual mechanism connector 6. Manual torsion bar(user self provided)
7. Main knife connecting rod(user self provided) 8. CS17G5 manual mechanism or CJ6 motor mechanism
9. CS17G2 manual mechanism 10. Drive box connector 11. Drive box
12. Grounding knife connecting rod(user self provided)

Note: Operating mechanism can also be installed between two phases or at the right end.