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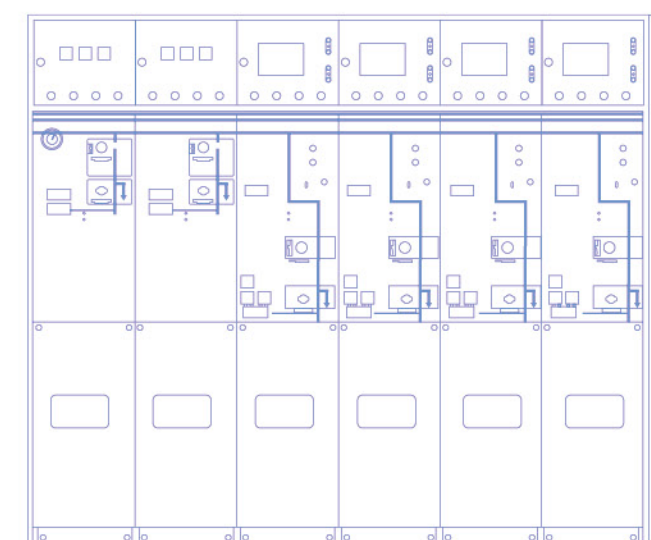
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YUFENG ELECTRIC

Ring Main Unit And Inflatable Cabinet

PRODUCT
SELECTION MANUAL



YUFENG ELECTRIC CO., LTD



About US

Yufeng Electric Co.,Ltd was founded in 2001 in the capital of electrical appliances-- Yueqing, Zhejiang Province. As a professional manufacturer and exporter, Yufeng specializes in components of switchgears from 7.2KV to 40.5 KV, such as earthing switch, interlocking device, insulating parts, chassis truck,vacuum circuit breaker and so on.

Covering an area of 10000 square meters, Yufeng now has over 320 staff, 25 technicians and total assets of 150 million RMB. We adhere to high starting point, high quality and high level of “three high” strategy and excellent management system, which helps us develop steadily. Passed ISO9001:2001, Yufeng gained praise in both domestic and international market for its good quality, best price and timely delivery.

In the future, Yufeng will never stop pursuing innovation and refinement to create values for customers and society, and strive to make it into a world-famous enterprise with model operation, scientific management and international brand.

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YUFENG ELECTRIC CO.,LTD.

Production Workshop

Fine business to meet customer's needs, make reliable products with the good quality and supply honest and good service.



Yufeng company looks forward to working with every customer to create a brilliant tomorrow.



Power driven civilization progress, the world is green bloom; The pursuit of excellence, technology to lead the future...





CHINA YUFENG ELECTRIC CO.,LTD.

Production Workshop

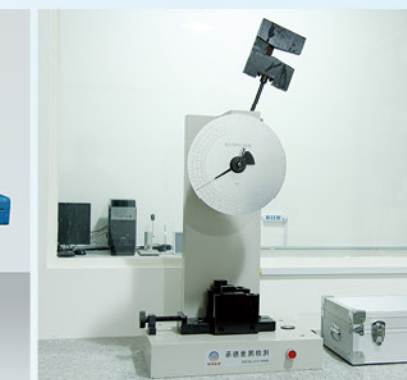
Pursue refinement to meet customers' needs, make reliable products with high quality, and supply honest and good service.



X-ray perspective testing(host computer)



X-ray perspective testing(console)



Impulse strength testing machine



Raw materials analysis lab



High & low temperature testing box



Salt mist test machine

Meticulously Make Professional Quality

Testing Equip- ment

With ingenuity, Yufeng manufactures high-quality products and provide sincere service.



Horizontal and vertical burning tester



Horizontal and vertical burning tester



YFRM6-12

Combined Fully Enclosed GIS

General

YFRM6-12 type inflatable switchgear is a completely sealed system while all live parts and switches are installed in a stainless steel shell. The entire switchgear will not be influenced by surroundings, ensuring operational reliability and personal safety, and maintenance-free operation. By combining expandable busbars, any combination can be achieved to realize full modularity. For extended busbar safety insulation and shielding, it is highly reliable and safe. The YFRM6-12 inflatable switchgear can also provide TV-based automation solutions, forming the concept of intelligent switches and minimizing on-site installation and commissioning.

YFRM6-12 type inflatable switchgear is divided into non-extended standard configuration and extensible standard configuration. It has extremely exceptional flexibility due to the combination of full and half modules and its own scalability. It has a long life for over 30 years operated under 20 °C indoor condition.

YFRM6-12 Combined Fully Enclosed GIS

Modular design

YFRM is a modular design. The basic module units are load switch modules, combined electrical modules and other special function modules. Any combination of these modules formed a common box structure. In the combination, any function is approximately the same as the internal structure of the basic module.

Normal use condition

It is applicable in the place with high and low temperature (−40°C~+40°C), humidity and salt. It can also be used in mine and the place with high altitude. Short term water in 24 hours does not affect the use.

Note: If higher altitude, please specify the altitude.

Product standard

- International standard
IEC60056、IEC60298、IEC60129、IEC60420、IEC60265、IEC60694 etc.
- Chinese standard
GB3804、GB3906、GB11022 etc.

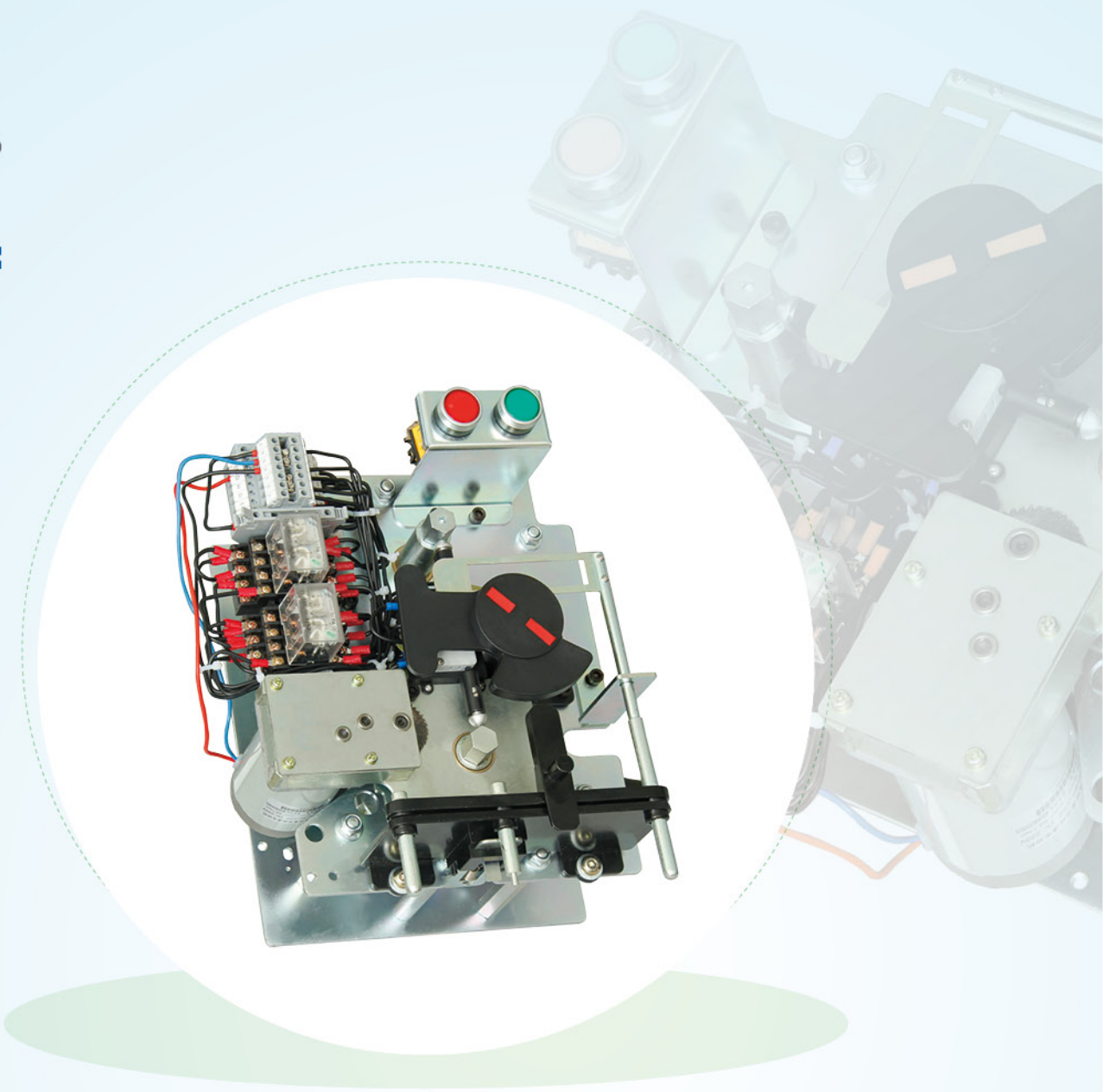
Flexible outlet and expansion

All modules of YERM can realize side outlet and side expansion or connection and top extension connection according to users' requirements, which can meet the needs of power supply scheme to the utmost extent.

Main technical specification

Item	Unit	C module	F module	V module		CB module	
		Load switch	Combination appliance	Vacuum switch	Disconnect/ Earthing switch	Vacuum circuit breaker	Disconnect/ Earthing switch
Rated voltage	KV	12/24	12/24	12/24	12/24	12/24	12/24
Power frequency withstand voltage	KV	45/50	42/50	42/50	42/50	42/50	42/50
Lightning impulse withstand voltage	KV	95/125	95/125	95/125	95/125	95/125	95/125
Rated current	A	630/630	Note ¹⁾	630/630		1250/630	
Closed loop breaking current	A	630/630					
Cable charging breaking current	A	135/135					
5% Rated active load breaking current	A	31.5/–					
Earthing fault breaking current	A	200/150					
Breaking current of cable charging during earthing fault	A	115/87					
Short circuit breaking current	KA		Note ²⁾	20/16		25/20	
Ability of closing and opening	KA	63/52.5	Note ²⁾	50/40	50/40	63/50	63/50
Short-time withstand current 2s	KA	25/–					
Short-time withstand current 3s	KA	–/21		20/16	20/16	25/20	25/20
Mechanical life	Time	5000	3000	5000	2000	5000	5000

Note: 1) Depends on the current rating of the fuse; 2) Limited by high voltage fuses.



Spring Operating Mechanism (Incoming Mechanism)

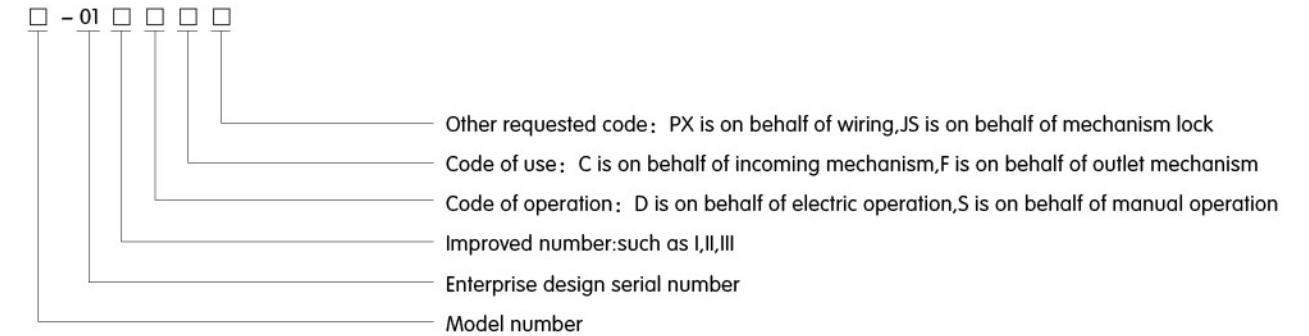
General

YF type spring operating mechanism (incoming mechanism) is suitable for XGN□-12/T630-25 and XGN□-12/T1250-31.5 indoor high voltage SF6 load switch. It's rated voltage is 12KV. This series of mechanisms is made according to the principle of spring over-discharge. There are three working positions: closing, opening and earthing. It has moderate volume and strong adaptability with convenient. It has the function of tripping the fuse and adding shunt tripping coil and overload current tripping coil.

The institution meets related requirements of GB3804-2004 "3.6KV-40.5KV high voltage AC load switch", GB16926-1997 "AC high voltage load switch-fuse-combination unit".

Spring Operating Mechanism (Incoming Mechanism)

Product definition



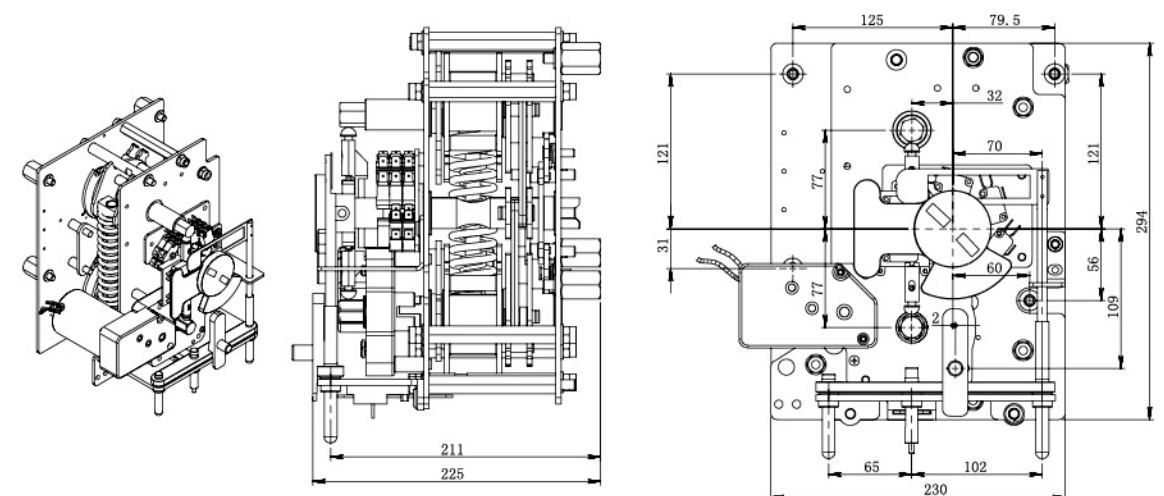
Operating specification

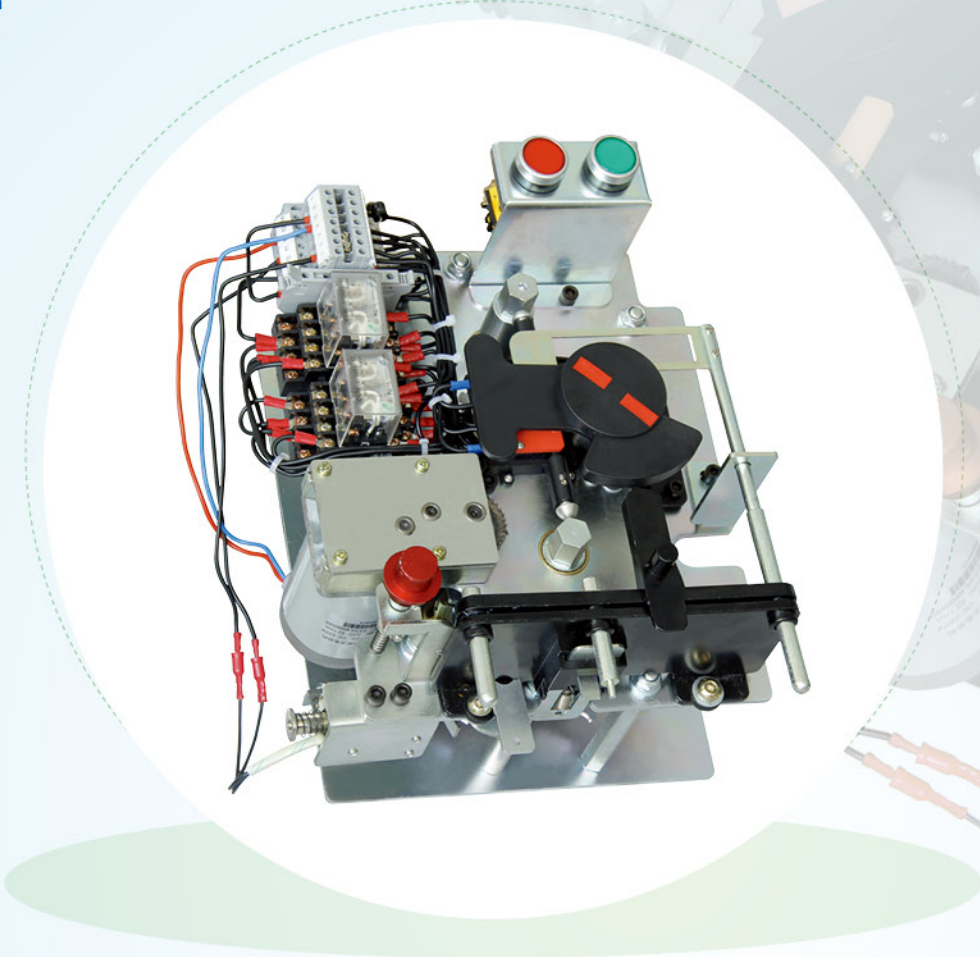
- Closing operation of load switch
The mechanism is fixed to the body and inserted into the closing operation shaft (below side) using a dedicated operating handle. Rotating the mechanism drives the contact to quickly perform the closing action of the load switch. Electric operation motor is energized to drive the mechanism to complete the switch closing operation.
- Opening operation of load switch
Using a dedicated operating handle to insert into the closing operation shaft (below side), rotate counterclockwise to open, the mechanism drives the spindle to complete the quick opening action.
- Earthing closing operation of load switch
The operating handle is inserted into the earthing shaft (top side) to turn 90 degrees counterclockwise, and the earthing circuit is closed by the body under the action of the spring force of the mechanism.
- Earthing opening operation of load switch
The operating handle is turned about 90 degrees counterclockwise, and the earthing circuit is opened by the body under the action of the spring force of the mechanism.

Note: 1. Please specify the voltage level when you order the electric spring mechanism, such as DC220、DC110、DC48、DC24 etc.

2. If the user needs to shunt trip coil, please specify the voltage level when ordering. If not indicated, it's the same as the electric operating motor voltage level.

Dimension drawing





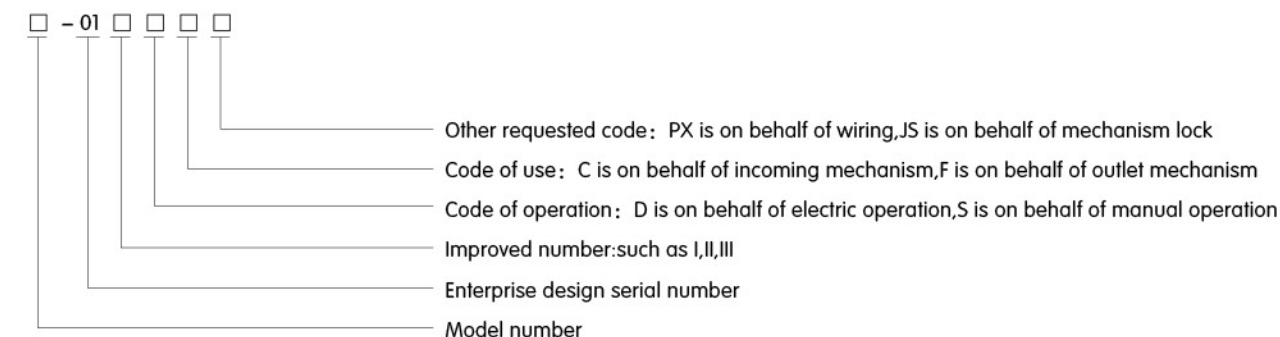
Spring Operating Mechanism(Outlet Mechanism)

General

YF spring operating mechanism(outlet mechanism) is suitable for XGN□-12/T630-25 and XGN□-12/T1250-31.5 indoor high voltage SF6 load switch. It's rated voltage is 12KV. This series of mechanisms is made according to the principle of spring over-discharge, and there are three working positions: closing, opening and earthing. It has moderate volume and strong adaptability with convenient installation. It has the function of tripping the fuse and adding with shunt tripping coil and overload current tripping coil. It meets GB3804-2004 "3.6KV-40.5KV high voltage AC load switch", GB16926-1997"AC high voltage load switch-fuse-combination unit".

Spring Operating Mechanism (Outlet Mechanism)

Product definition



Operating specification

The mechanism is fixed to the body and inserted into the closing operation shaft (below side) using a dedicated operating handle. Rotate clockwise to close. Rotate the spring counterclockwise to complete the energy storage to release process. The mechanism drives the contact to quickly perform the closing action of the load switch, and at the same time, the spring energy storage prepares for the opening or the electric operation motor drives the mechanism to complete the switch closing operation.

Opening operation of load switch

By pressing the opening button, the energy of the opening spring is released, and the mechanism drives the principal axis to complete the quick opening action.

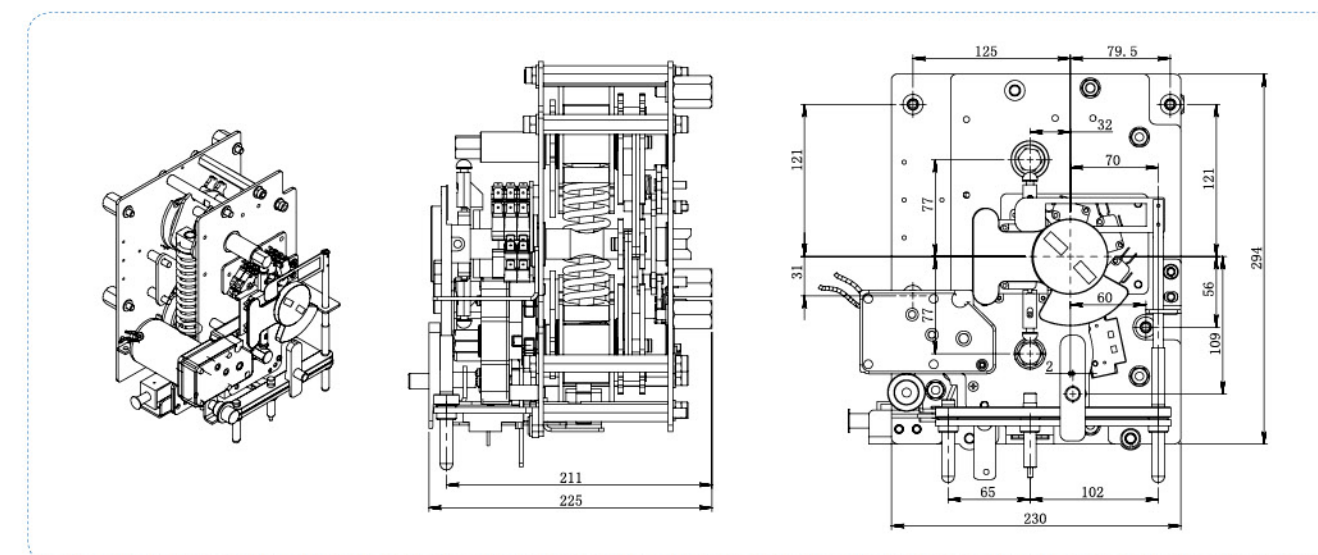
Earthing closing operation of load switch

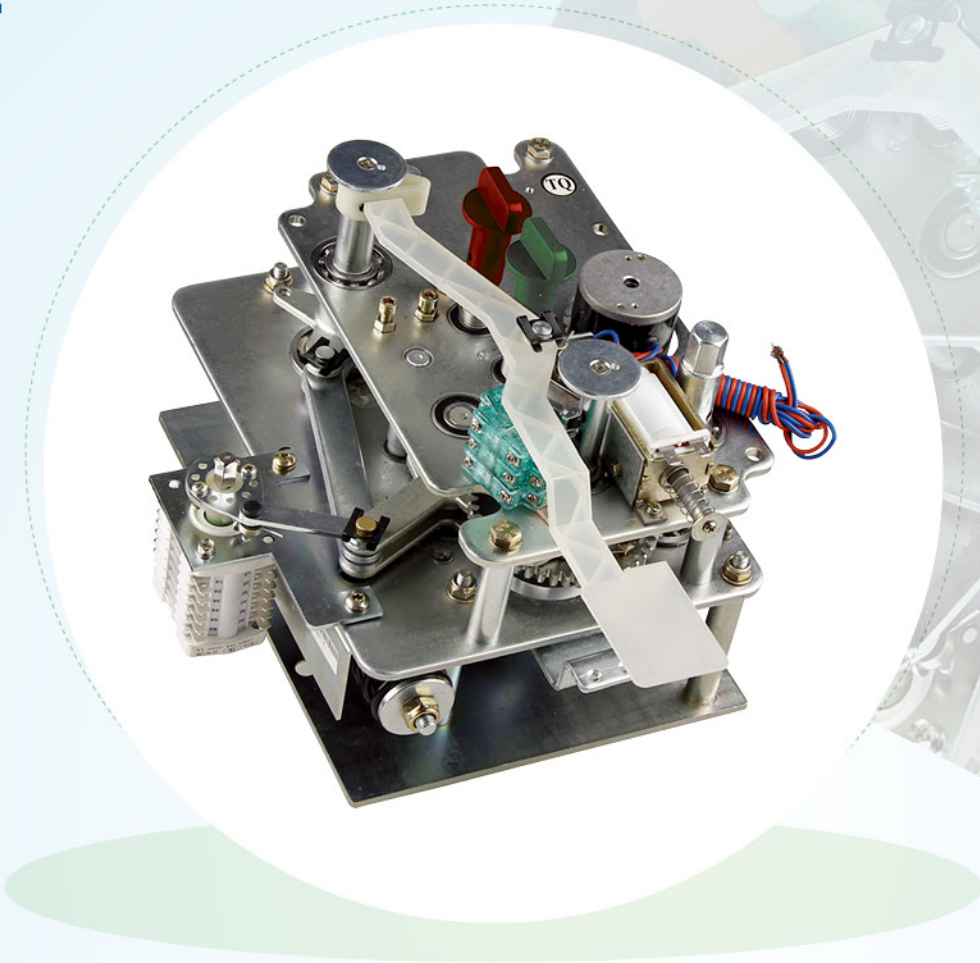
The operating handle is inserted into the earthing shaft (top side) to turn 90 degrees counterclockwise, and the earthing circuit is closed by the body under the action of the spring force of the mechanism.

The operating handle is turned about 90 degrees counterclockwise, and the earthing circuit is opened by the body under the action of the spring force of the mechanism.

- Note: 1.The outlet spring operating mechanism has a fuse trip, a manual opening button function, and an additional opening trip coil and an overcurrent trip coil.
2.Please specify the voltage level when you order the electric spring mechanism, such as DC220、DC110、DC48、DC24 etc.
3.If the user needs to shunt trip coil, please specify the voltage level when ordering. If not indicated, it's the same as the electric operating motor voltage level.

Dimension drawing





Spring Operating Mechanism (Circuit Breaker Mechanism)

General

This spring mechanism meets technical requirements of GB1984-2003 "high voltage AC circuit breaker". It matches 12T-/630T-20 series products. The mechanism has a reclosing function and the volume (size) is small.

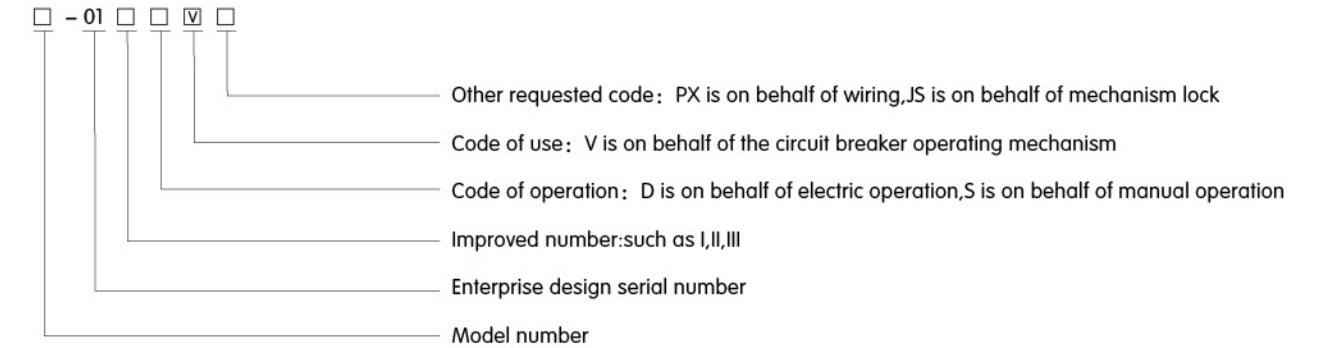
Rated voltage: DC220V, 110V, 48V, 24V.

Mechanism output angle: about 88°.

Mechanical life: 10000 times.

Spring Operating Mechanism (Circuit Breaker Mechanism)

Product definition



Operating specification

Energy storage operation

Confirm the inspection of the product for transport deformation, fix the mechanism to the switch and insert it into the lower right part of the mechanism with a dedicated operating handle. Rotate clockwise (or charge the motor) till cracking sound occurs, which indicates the finish of energy storage.

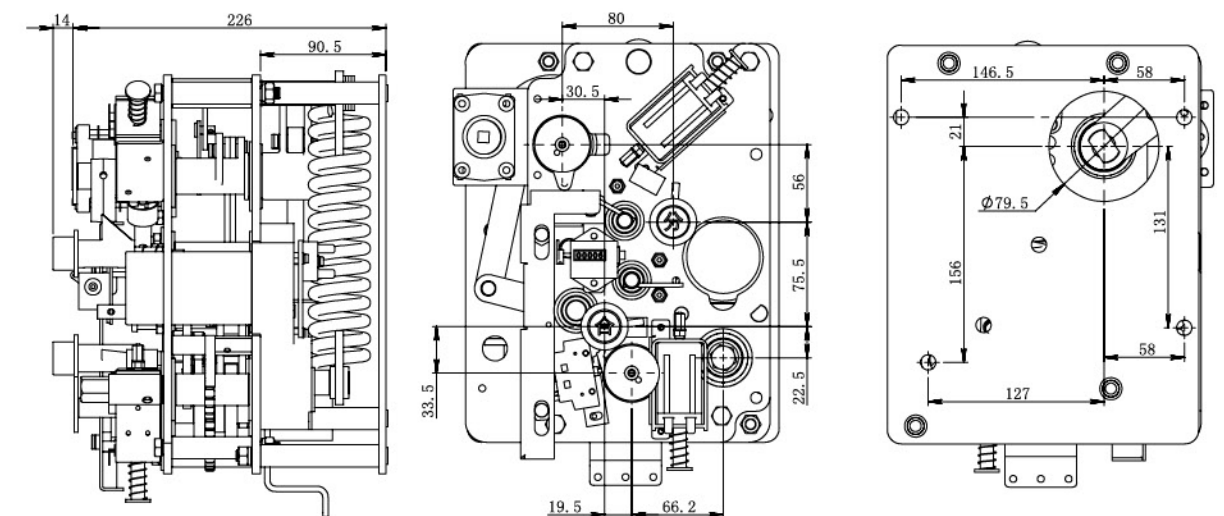
Closing operation

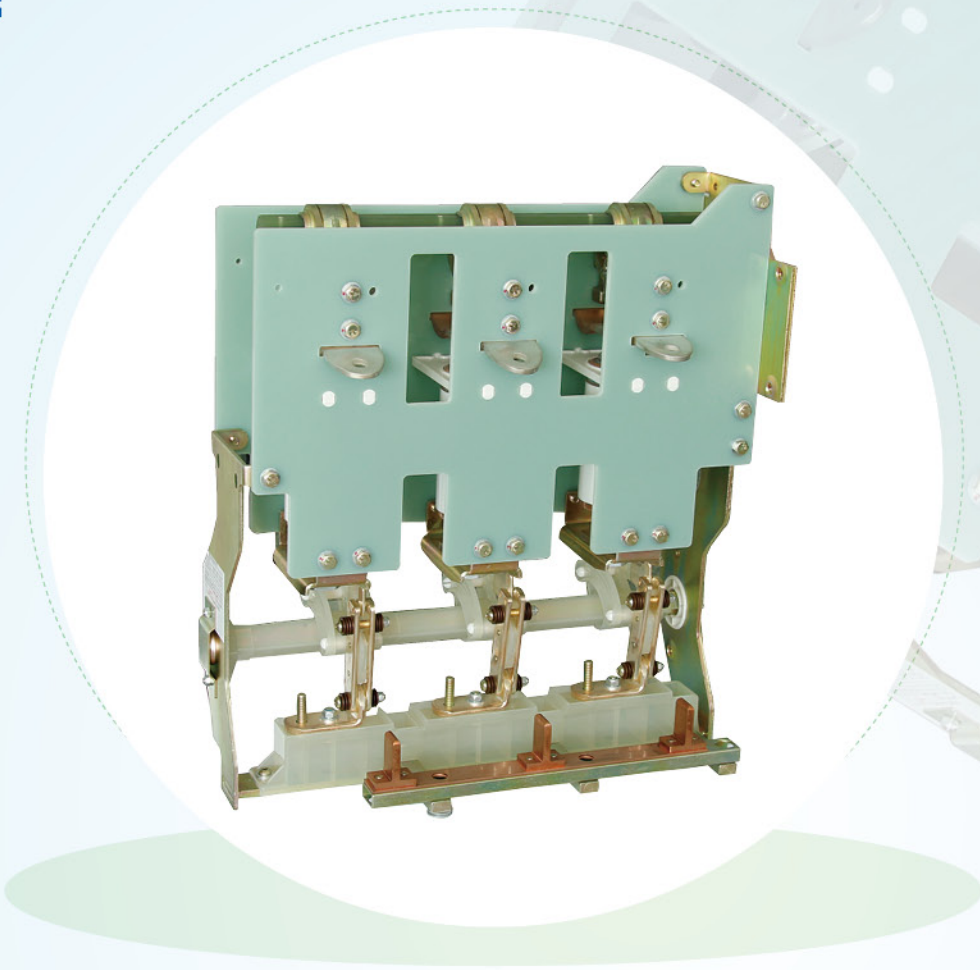
Press the green button, and the breaker switch is closed by the spring force of the mechanism. Or when the motor is operated, the closing operation of the closing coil charging mechanism is completed, and the opening spring is stored. At this time, the energy can be stored again but cannot be closed again (with interlock).

Opening operation

Press the red button, and the breaker switch is opened by the spring force of the mechanism. Or when the motor is operated, the opening operation of the opening coil charging mechanism is completed.

Dimension drawing





12KV-630A

Gas Insulated Switchgear Circuit Breaker(With Isolation, Earthing)

General

YFV-12KV-630A circuit breaker has the advantages of easy installation, little maintenance, long life, small size, low price, safety and reliability.

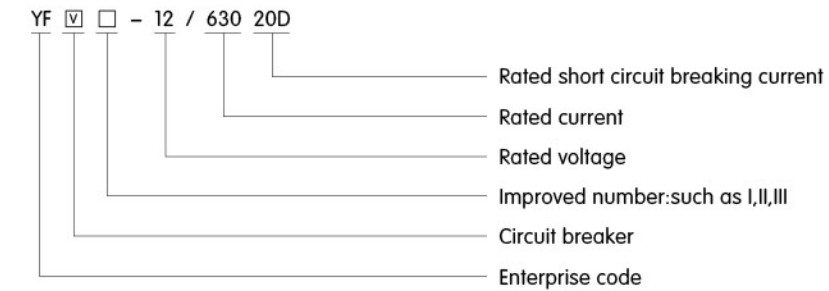
This product meets technical requirements of GB1984-89, GB/T1984-2003 "AC high voltage circuit breaker".

Major loop: 630A-20KA(4s), 25KA(3s), Mechanical life: 10000 times.

Ground loop: 20KA(2s), Mechanical life: 20000 times.

12KV-630A Gas Insulated Switchgear Circuit Breaker(With Isolation, Earthing)

Product definition



Working condition

- Altitude is not more than 1000m, earthquake intensity is not more than 8 degrees.
- Pollution resistance level: III.
- Ambient temperature: -40°C ~ +140°C, relative humidity daily average ≤ 90%, monthly average ≤ 90%.
- Frequently vibrating installation sites, places with water vapor, gas, chemical corrosive deposits, salt spray, dust and dirt, and fires, that significantly affect the performance of the mechanism and places with fire or explosion hazards are not suitable.

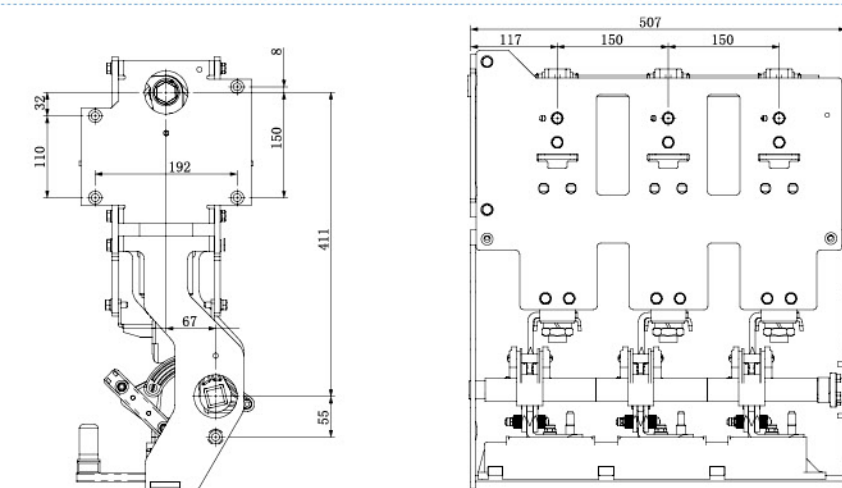
Main technical specification

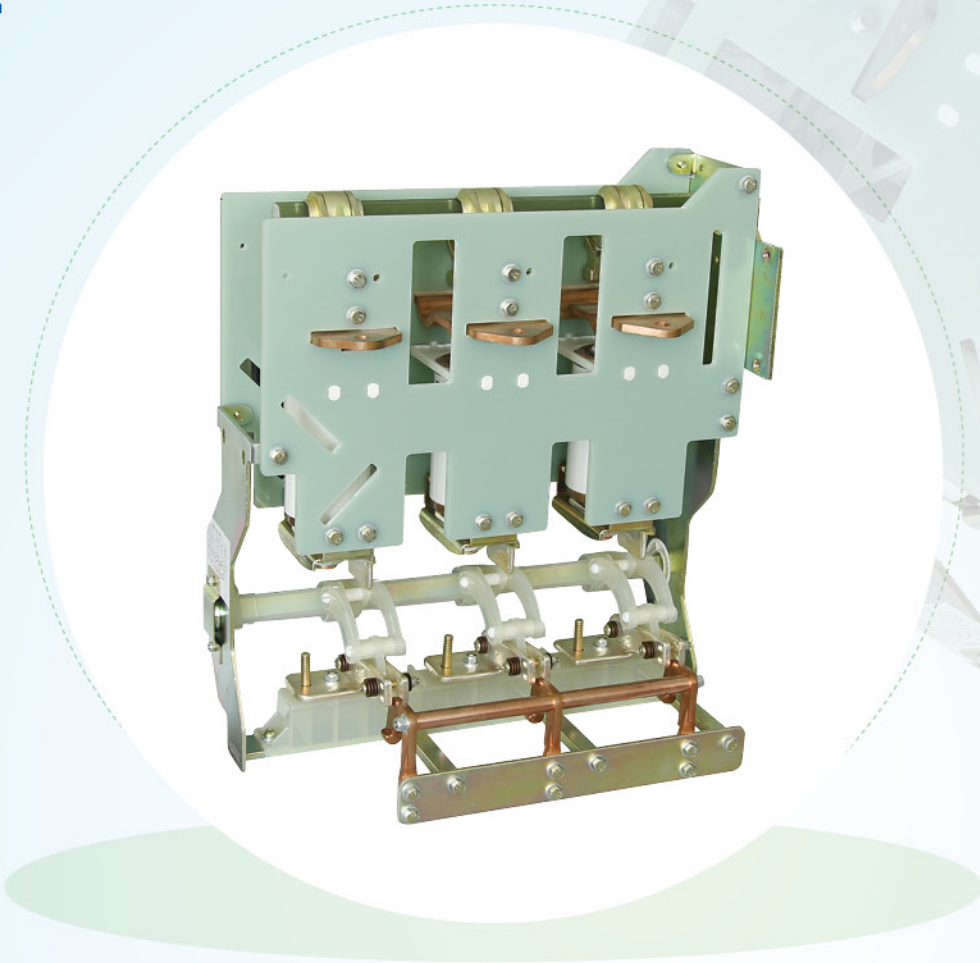
No.	Item	Unit	Data
1	Rated frequency	Hz	50
2	Rated current	A	630
3	Rated short time withstand current	KA	20/25
4	Rated peak withstand current	KA	50
5	Rated short circuit duration	s	4
6	Rated short circuit closing current	KA	50
7	Rated operation sequence	O-0.3s-180s-CO	

Mechanical specification

No.	Item	Unit	Data
1	Circuit breaker main loop resistance	UΩ	≤30
2	Overtravel	mm	2-3
3	Spacing	mm	8-10
4	Bounce	ms	≤2
5	Opening average speed	m/s	0.6-1.4
6	Closing average speed	m/s	0.4-1.1
7	Opening three phase asynchronous	ms	≤2
8	Closing three phase asynchronous	ms	≤2

Circuit breaker outline and installation dimension





24KV-800A

Gas Insulated Switchgear Circuit Breaker(With Isolation, Earthing)

General

YFV-24KV-800A circuit breaker has the advantages of easy installation, little maintenance, long life, small size, low price, safety and reliability.

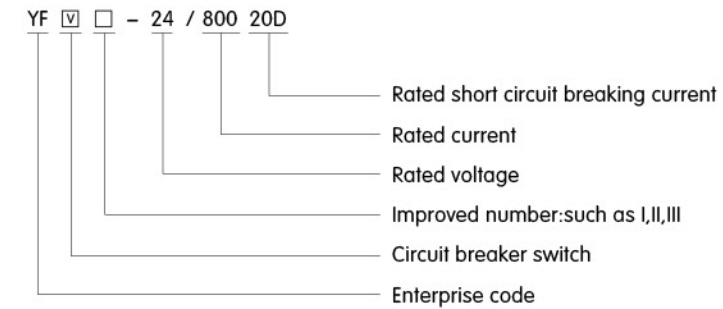
This product meets technical requirements of GB1984-89, GB/T1984-2003 "AC high voltage circuit breaker".

Major loop: 800A-20KA(4s), 25KA(3s), Mechanical life: 10000 times.

Ground loop: 20KA(2s), Mechanical life: 20000 times.

24KV-800A Gas Insulated Switchgear Circuit Breaker(With Isolation, Earthing)

Product definition



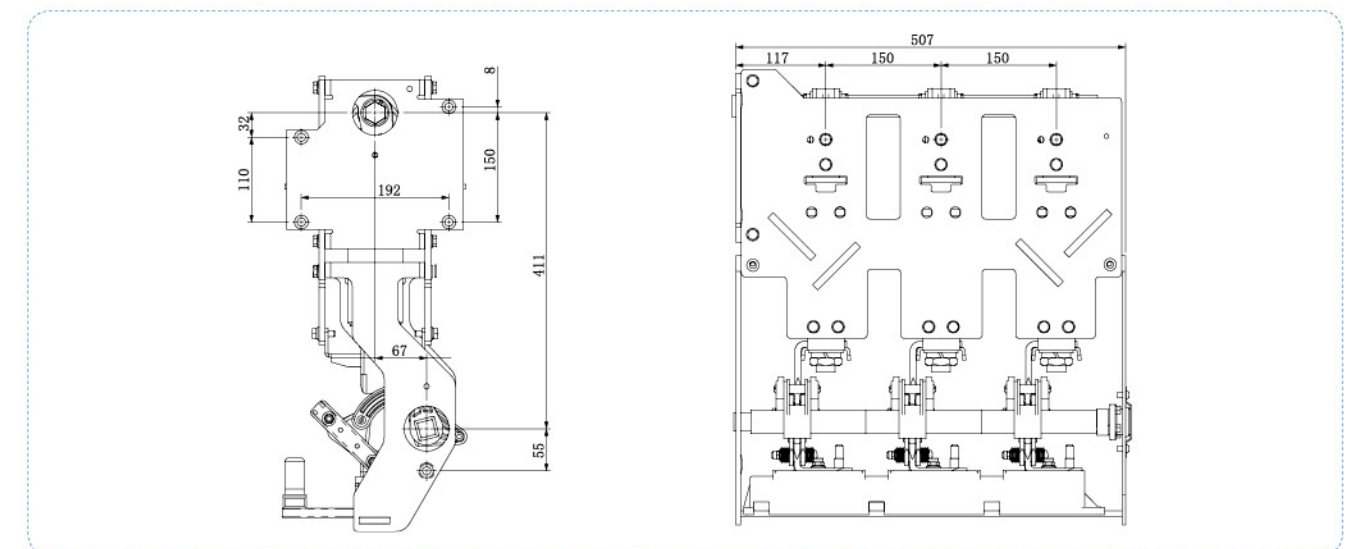
Working condition

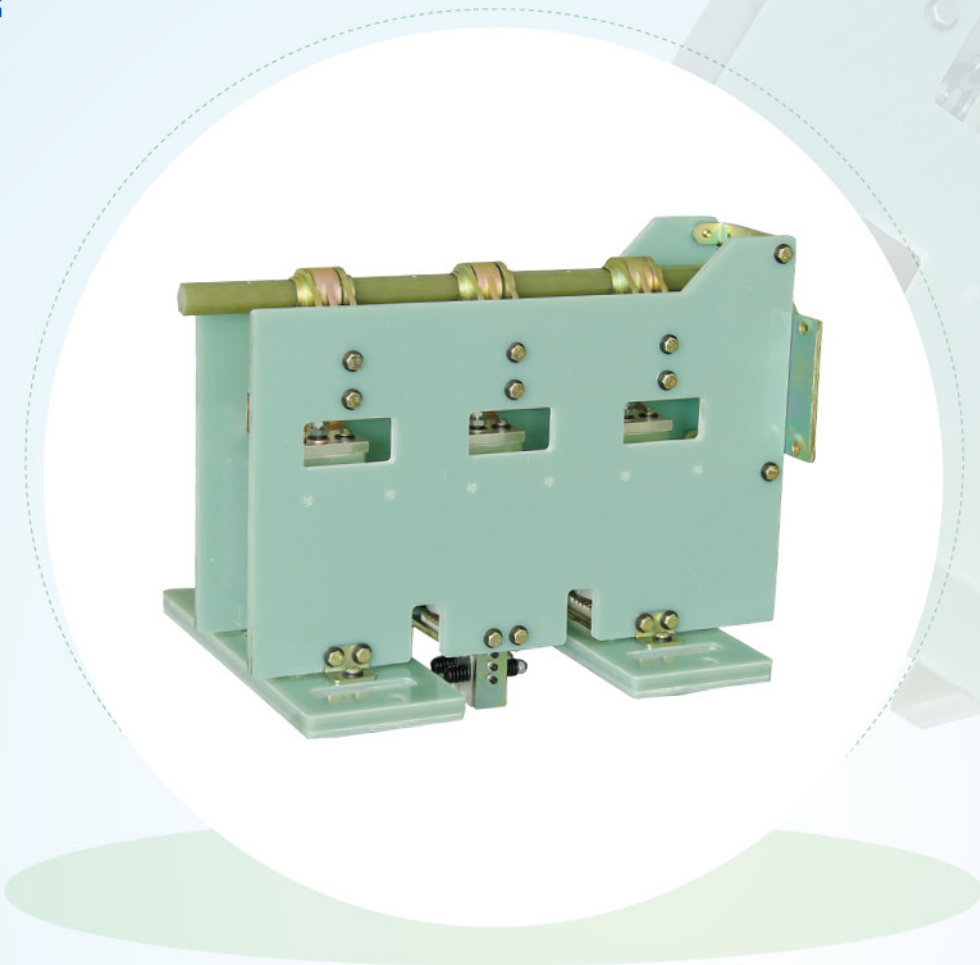
- Altitude is not more than 1000m, earthquake intensity is not more than 8 degrees.
- Pollution resistance level: III.
- Ambient temperature: $-40^{\circ}\text{C} \sim +140^{\circ}\text{C}$, relative humidity daily average $\leq 90\%$, monthly average $\leq 90\%$.
- Frequently vibrating installation sites, places with water vapor, gas, chemical corrosive deposits, salt spray, dust and dirt, and fires, that significantly affect the performance of the mechanism and places with fire or explosion hazards are not suitable.

Main technical specification

No.	Item	Unit	Data
1	Rated frequency	Hz	50
2	Rated current	A	800
3	Rated short time withstand current	KA	20/25
4	Rated peak withstand current	KA	50
5	Rated short circuit duration	s	4
6	Rated short circuit closing current	KA	50
7	Rated operation sequence	O-0.3s-180s-CO	

Circuit breaker outline and installation dimension





12KV-1250A

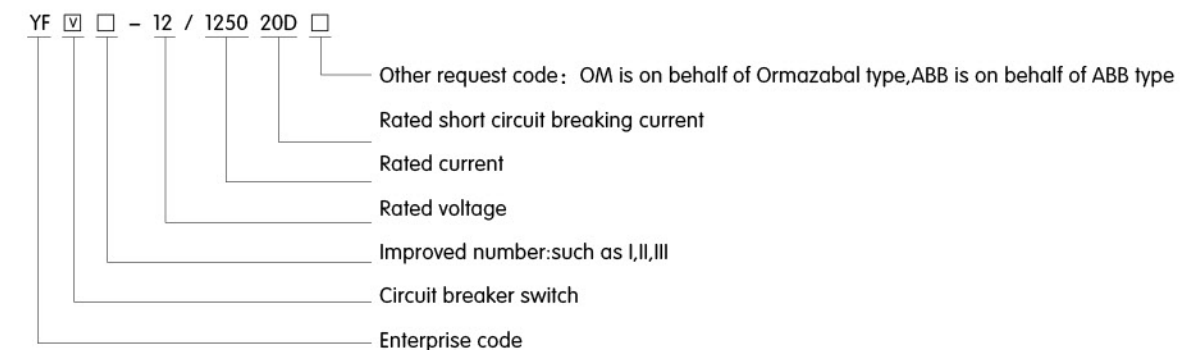
Gas Insulated Switchgear Circuit Breaker(ABB)

General

YFV-12KV-1250A circuit breaker switch has the advantages of easy installation, little maintenance, long life, small size, low price, safety and reliability.
This product meets technical requirements of GB1984-89, GB/T1984-2003 "AC high voltage circuit breaker".
Major loop: 1250A-20KA(4s), 25KA(3s), Mechanical life: 10000 times.
Ground loop: 20KA(2s), Mechanical life: 20000 times.

12KV-1250A Gas Insulated Switchgear Circuit Breaker(ABB)

Product definition



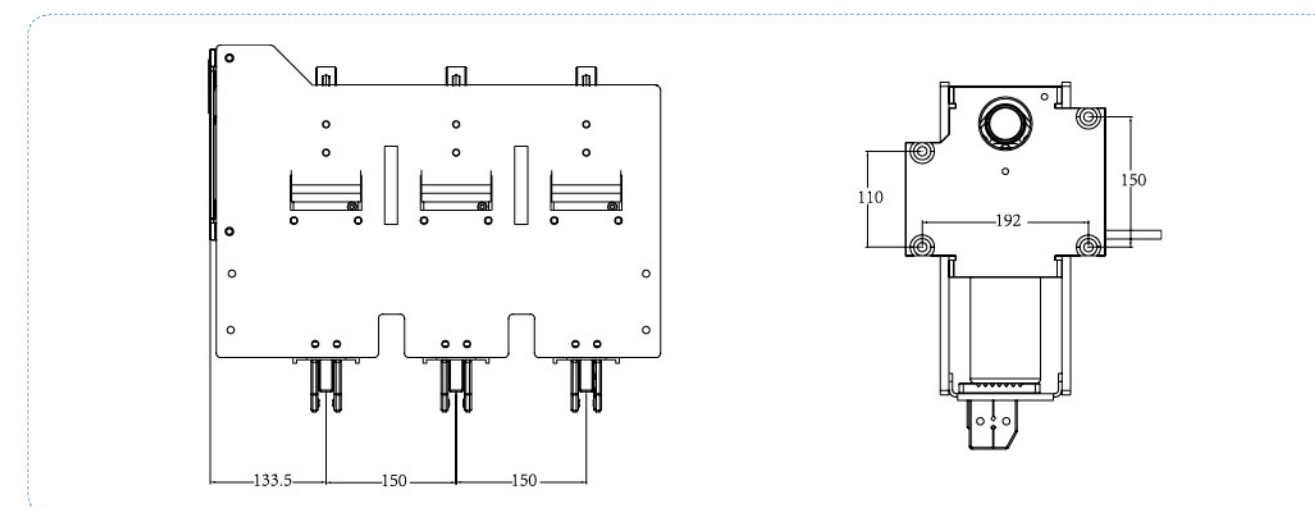
Working condition

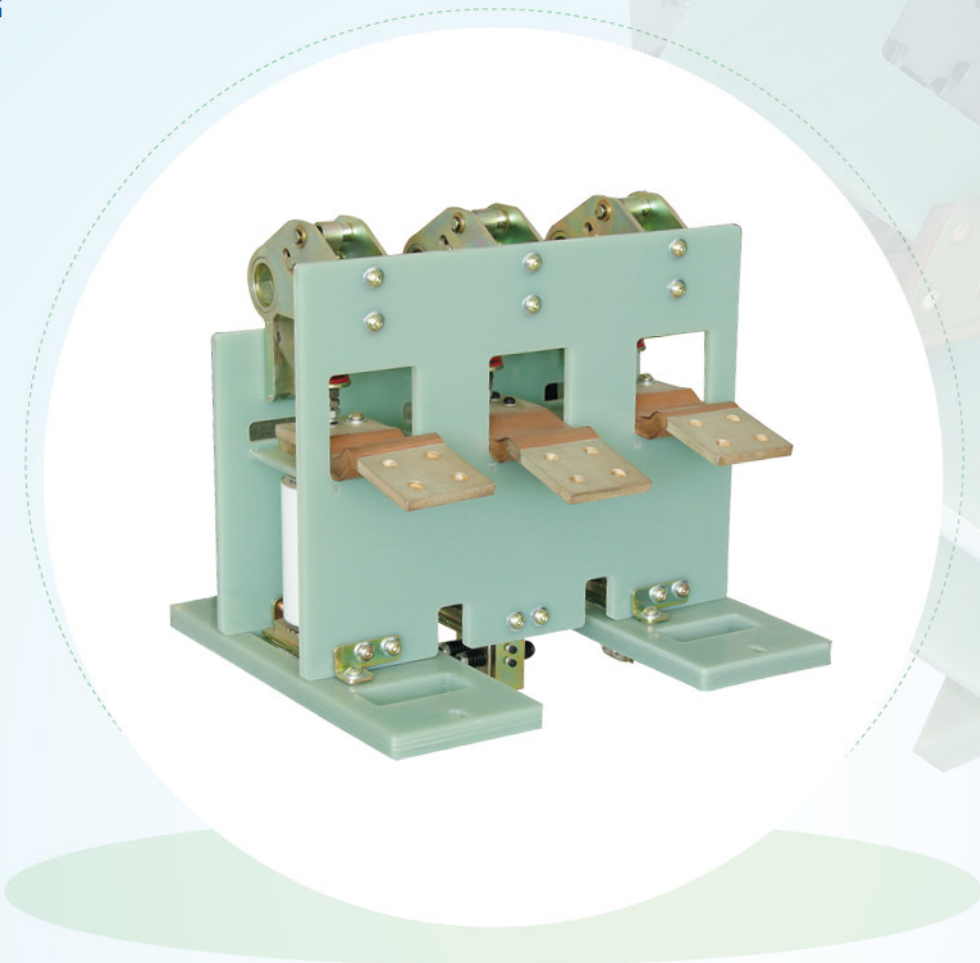
- Altitude is not more than 1000m, earthquake intensity is not more than 8 degrees.
- Pollution resistance level: III.
- Ambient temperature: $-40^{\circ}\text{C} \sim +140^{\circ}\text{C}$, relative humidity daily average $\leq 90\%$, monthly average $\leq 90\%$.
- Frequently vibrating installation sites, places with water vapor, gas, chemical corrosive deposits, salt spray, dust and dirt, and fires, that significantly affect the performance of the mechanism and places with fire or explosion hazards are not suitable.

Main technical specification

No.	Item	Unit	Data
1	Rated frequency	Hz	50
2	Rated current	A	1250
3	Rated short time withstand current	KA	20/25
4	Rated peak withstand current	KA	50
5	Rated short circuit duration	s	4
6	Rated short circuit closing current	KA	50
7	Rated operating sequence	O-0.3s-180s-CO	

Circuit breaker outline and installation dimension





12KV-1250A

Circuit Breaker in Gas Insulated Switchgear (Ormazabal Type)

General

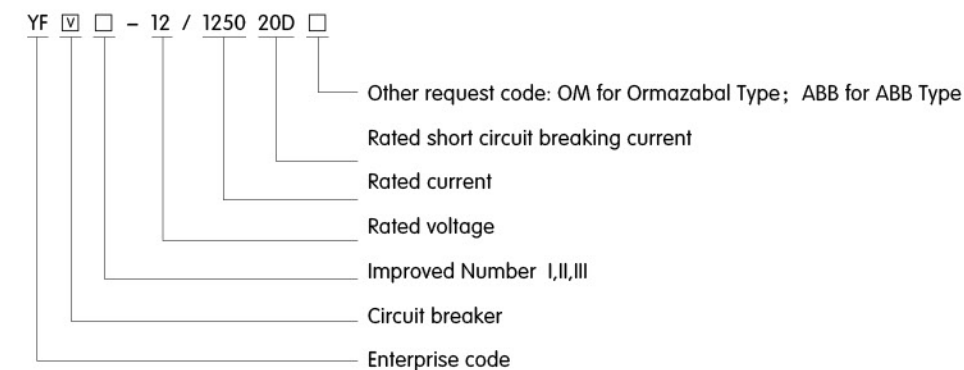
Circuit breaker of YFV-12KV-1250A is cheap, small and easy to install with little maintenance and long life. It complies with technical requirements of GB1984-89 and GB/T1984-2003 "High-voltage Alternating-current circuit breakers".

Major loop: 1250A-20KA (4s); 25KA (3s); Mechanical life: 10000 times.

Ground loop: 20KA(2s); Mechanical life: 2000 times.

12KV-1250A Circuit Breaker In Gas Insulated Switchgear (Ormazabal Type)

Product definition



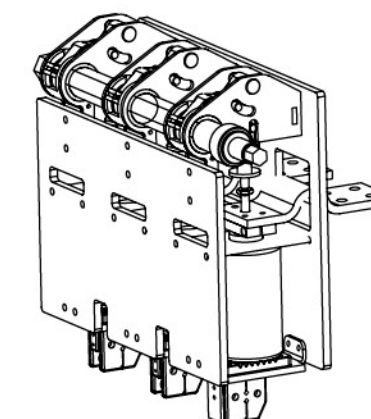
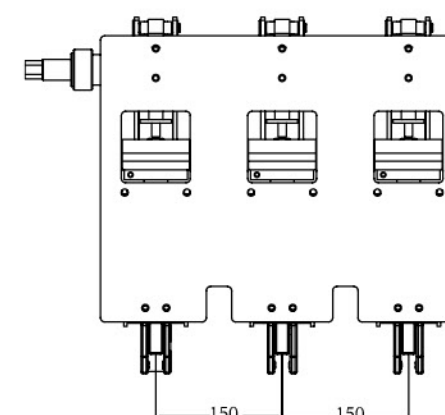
Working condition precautions

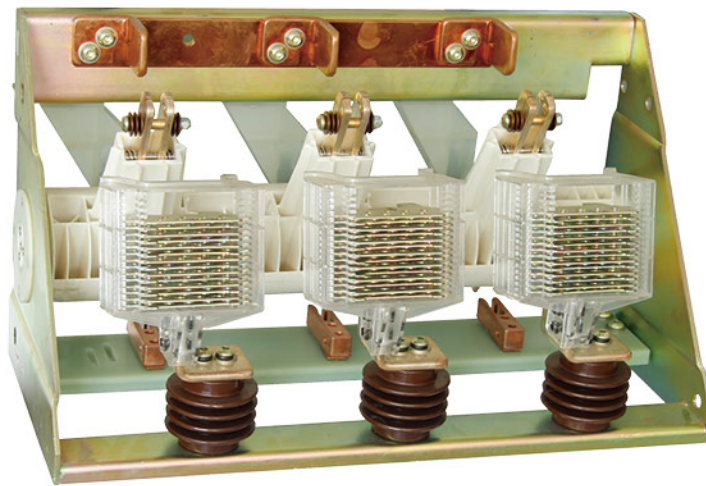
- Altitude $\leq 1000\text{m}$, Earthquake intensity ≤ 8 degree.
- Class of pollution: II.
- Ambient temperature: $-40^{\circ}\text{C} \sim +140^{\circ}\text{C}$; Relative humidity daily average $\leq 90\%$, monthly average $\leq 90\%$.
- Not applicable in the place with frequently violent vibrations, or water vapor, gas, chemically corrosive sediments, salt spray, dust and dirt, that would significantly affect the performance of the mechanism, or fire and explosion hazards.

Main technical specification

No.	Item	Unit	Data
1	Rated frequency	Hz	50
2	Rated current	A	1250
3	Rated short time withstand current	KA	20/25
4	Rated peak withstand current	KA	50
5	Rated short circuit duration	s	4
6	Rated short circuit making current	KA	50
7	Rated operating sequence	O-0.3s-180s-CO	

Circuit breaker outline and installation dimension





12KV-630A Composite Apparatus

General

YFC-12KV-630A composite apparatus complies with related requirements in GB3804-2004 "High voltage alternating-current switches for rated voltage above 3.6KV and less than 40.5KV", and GB16926-1997 "High voltage alternating current switch-fuse combinations"

Major loop: 630A-20KA (4s), 25KA (3s), Mechanical life: 5000 times.

Ground loop: 20KA (2s), Mechanical life: 2000 times.

12KV-630A Composite Apparatus

Product definition

YF	□	□	-	12	/	630	20D	□	
									Other request code: OM for Ormazabal Type; ZH for Composite Apparatus
									Rated short circuit breaking current
									Rated current
									Rated voltage
									Improved Number I,II,III
									Load switch
									Enterprise code

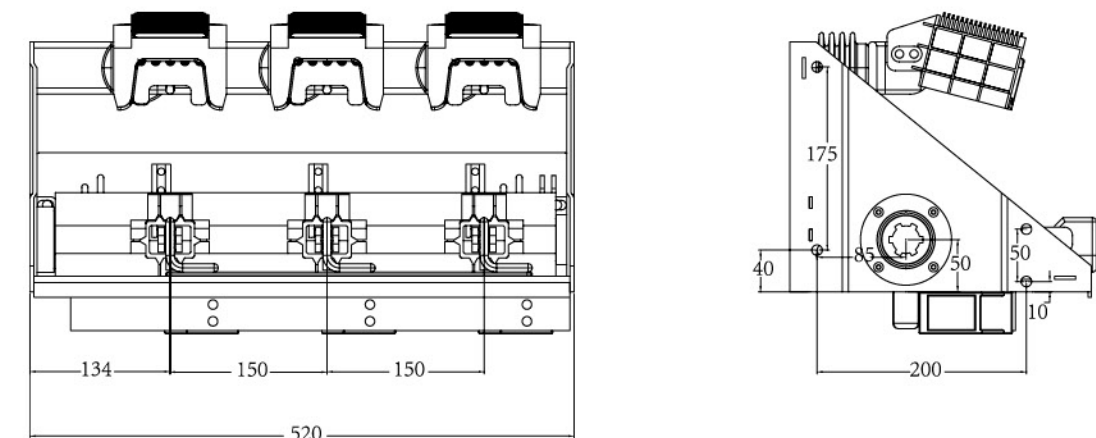
Working condition precautions

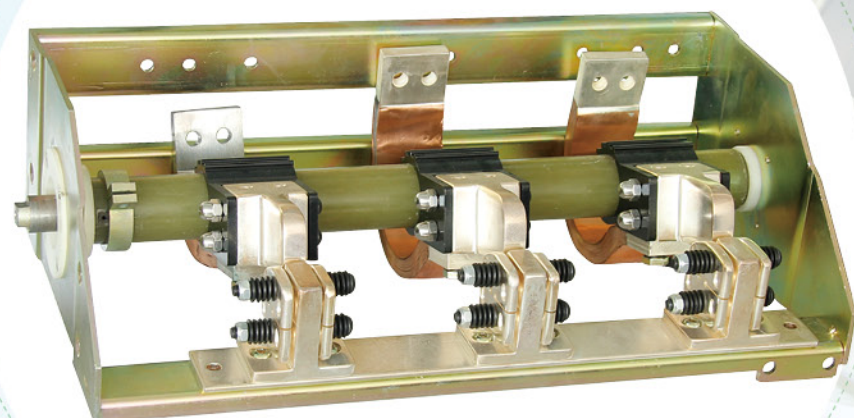
- Altitude $\leq 1000\text{m}$, Earthquake intensity ≤ 8 degree.
- Class of pollution: II.
- Ambient temperature: $-40^{\circ}\text{C} \sim +140^{\circ}\text{C}$; Relative humidity daily average $\leq 90\%$, monthly average $\leq 90\%$.
- Not applicable in the place with frequently violent vibrations, or water vapor, gas, chemically corrosive sediments, salt spray, dust and dirt, that would significantly affect the performance of the mechanism, or fire and explosion hazards.

Main technical specification

No.	Item	Unit	Data
1	Rated frequency	Hz	50
2	Rated current	A	630
3	Rated short time withstand current	KA	20/25
4	Rated peak withstand current	KA	50
5	Rated short circuit duration	s	4
6	Rated short circuit making current	KA	50
7	Theoretical operation	Times	5000

Outline and installation dimension of load switch





12KV-1250A Disconnector

General

YFG-12KV-1250A is a kind of disconnector, which is cheap and easy to install with its little maintenance, long life and small size.

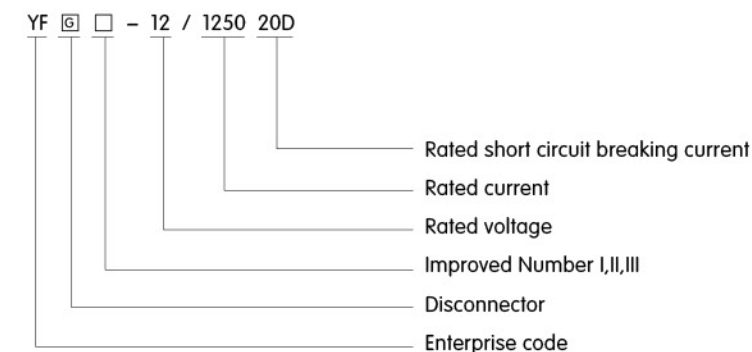
It complies with the technical requirements of GB1984-89 and GB/T1984-2003 "High-voltage alternating-current circuit-breakers".

Major loop: 1250A-20KA (4s); 25KA (3s); Mechanical life: 5000 times.

Ground loop: 20KA(2s); Mechanical life: 2000 times.

12KV-1250A Disconnector

Product definition



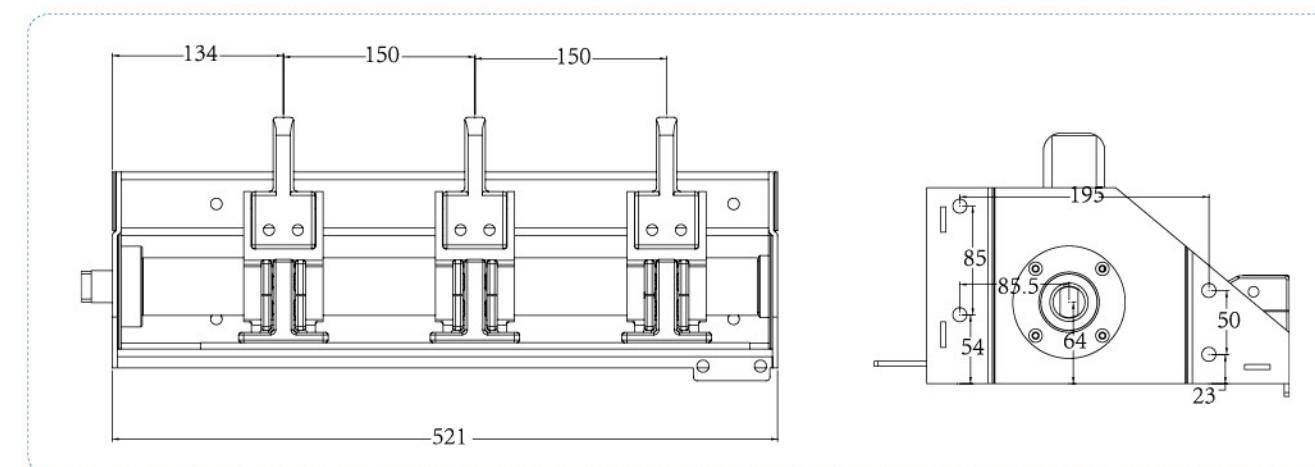
Working condition precautions

- Altitude $\leq 1000\text{m}$, earthquake intensity ≤ 8 degree.
- Class of pollution: II.
- Ambient temperature: $-40^{\circ}\text{C} \sim +140^{\circ}\text{C}$; Relative humidity daily average $\leq 90\%$, monthly average $\leq 90\%$.
- Not applicable in the place with frequently violent vibrations, or water vapor, gas, chemically corrosive sediments, salt spray, dust and dirt, that would significantly affect the performance of the mechanism, or fire and explosion hazards.

Main technical specification

No.	Item	Unit	Data
1	Rated frequency	Hz	50
2	Rated current	A	1250
3	Rated short time withstand current	KA	20/25
4	Rated peak withstand current	KA	50
5	Rated short circuit duration	s	4
6	Rated short circuit making current	KA	50
7	Rated operating sequence	O-0.3s-180s-CO	

Outline and installation dimension of disconnector





12KV-630A

Load Switch

General

Load switch of YFC-12KV-630A complies with the technical requirements of GB3804-2004 "High-voltage alternating-current switches for rated voltage above 3.6KV and up to and including 40.5KV" and GB16926-1997 "High-voltage alternating current switch-fuse combinations"

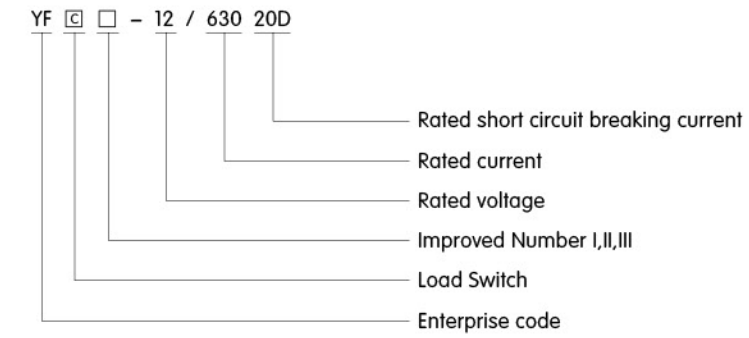
Major loop: 630A-20KA (4s); 25KA (3s); Mechanical life: 5000 times.

Ground loop: 20KA(2s); Mechanical life: 2000 times.

12KV-630A

Load Switch

Product definition



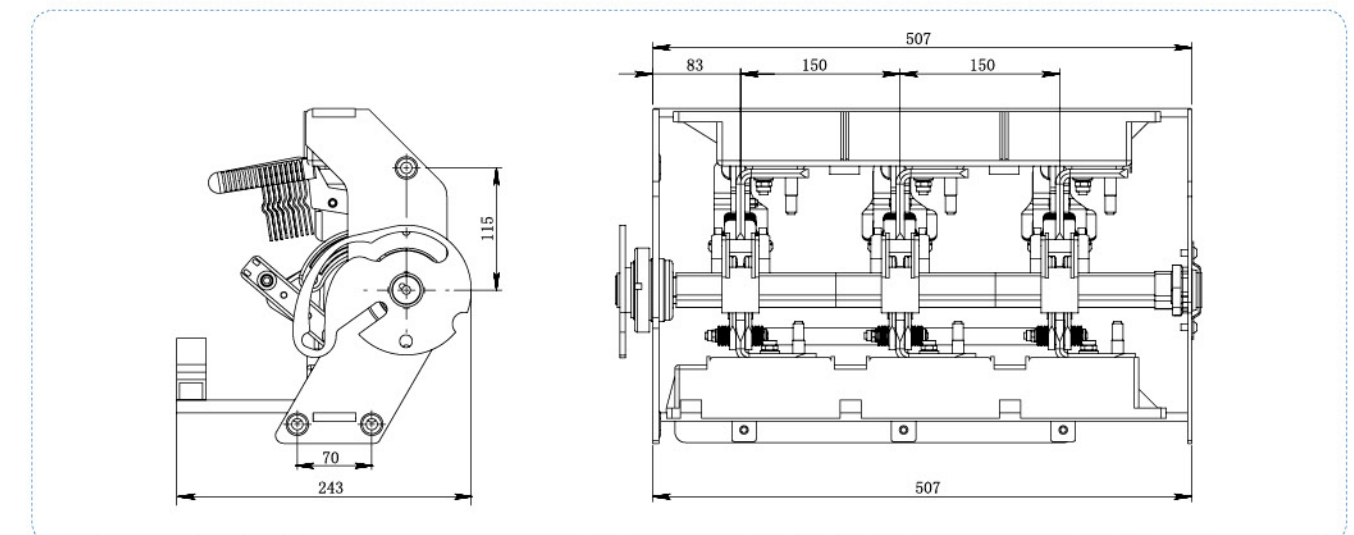
Working condition precautions

- Altitude $\leq 2000\text{m}$, earthquake intensity ≤ 8 degree.
- Ambient temperature: $-40^{\circ}\text{C} \sim +140^{\circ}\text{C}$; Relative humidity daily average $\leq 90\%$, monthly average $\leq 90\%$.
- Not applicable in the place with frequently violent vibrations, or water vapor, gas, chemically corrosive sediments, salt spray, dust and dirt, that would significantly affect the performance of the mechanism, or fire and explosion hazards.

Main technical specification

No.	Item	Unit	Data
1	Rated frequency	Hz	50
2	Rated current	A	630
3	Rated short time withstand current	KA	20/25
4	Rated peak withstand current	KA	50
5	Rated short circuit duration	s	4
6	Rated short circuit making current	KA	50
7	Theoretical operation	Times	5000

Outline and installation dimension of load switch





12KV-800A

Load Switch

General

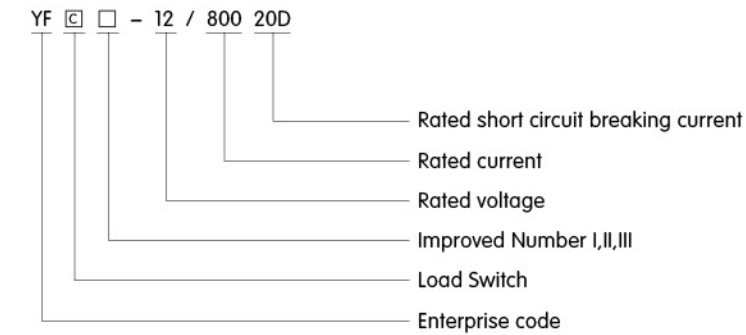
Load switch of YFC-12KV-800A complies with the technical requirements of GB3804-2004 "High-voltage alternating-current switches for rated voltage above 3.6KV and up to and including 40.5KV" and GB16926-1997 "High-voltage alternating current switch-fuse combinations"

Major loop: 800A-20KA (4s); 25KA (3s); Mechanical life: 5000 times.

Ground loop: 20KA(2s); Mechanical life: 2000 times.

12KV-800A Load Switch

Product definition



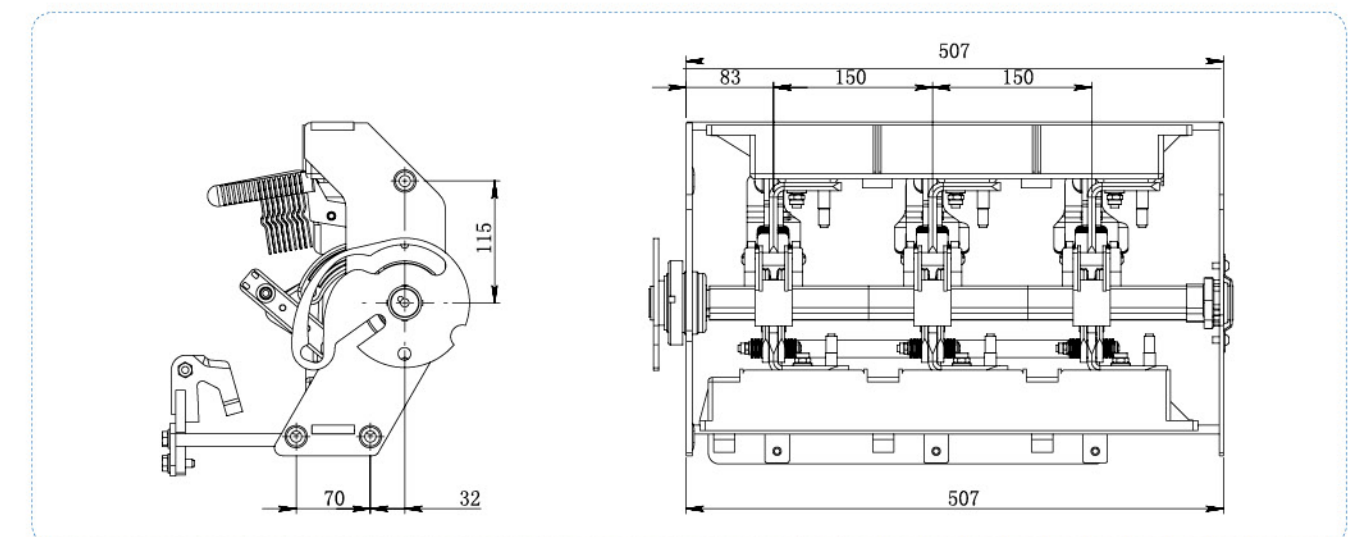
Working condition precautions

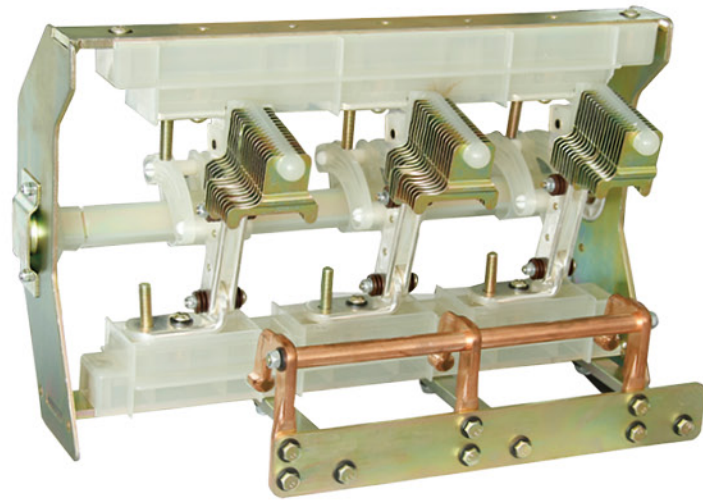
- Altitude $\leq 1000\text{m}$, Earthquake intensity ≤ 8 degree.
- Class of pollution: II.
- Ambient temperature: $-40^{\circ}\text{C} \sim +140^{\circ}\text{C}$; relative humidity daily average $\leq 90\%$, monthly average $\leq 90\%$.
- Not applicable in the place with frequently violent vibrations, or water vapor, gas, chemically corrosive sediments, salt spray, dust and dirt, that would significantly affect the performance of the mechanism, or fire and explosion hazards.

Main technical specification

No.	Item	Unit	Data
1	Rated frequency	Hz	50
2	Rated current	A	800
3	Rated short time withstand current	KA	20/25
4	Rated peak withstand current	KA	50
5	Rated short circuit duration	s	4
6	Rated short circuit making current	KA	50
7	Theoretical operation	Times	5000

Outline and installation dimension of load switch





24KV-630A

Load Switch

General

Load switch of YFC-24KV-630A complies with the technical requirements of GB3804-2004 "High-voltage alternating-current switches for rated voltage above 3.6KV and up to and including 40.5KV " and GB16926-1997 "High-voltage alternating current switch-fuse combinations".

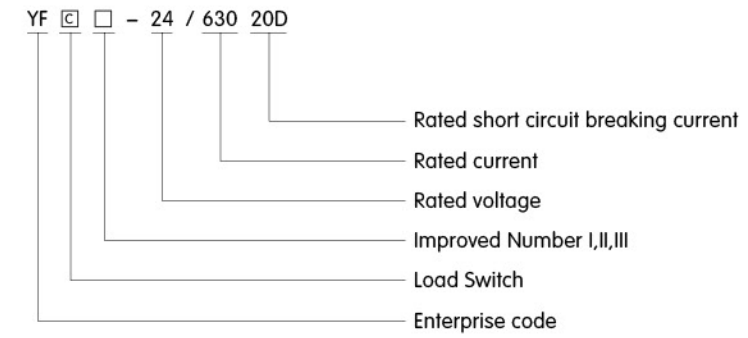
Major loop: 630A-20KA (4s); 25KA (3s); Mechanical life: 5000 times.

Ground loop: 20KA(2s); Mechanical life: 2000 times.

24KV-630A

Load Switch

Product definition



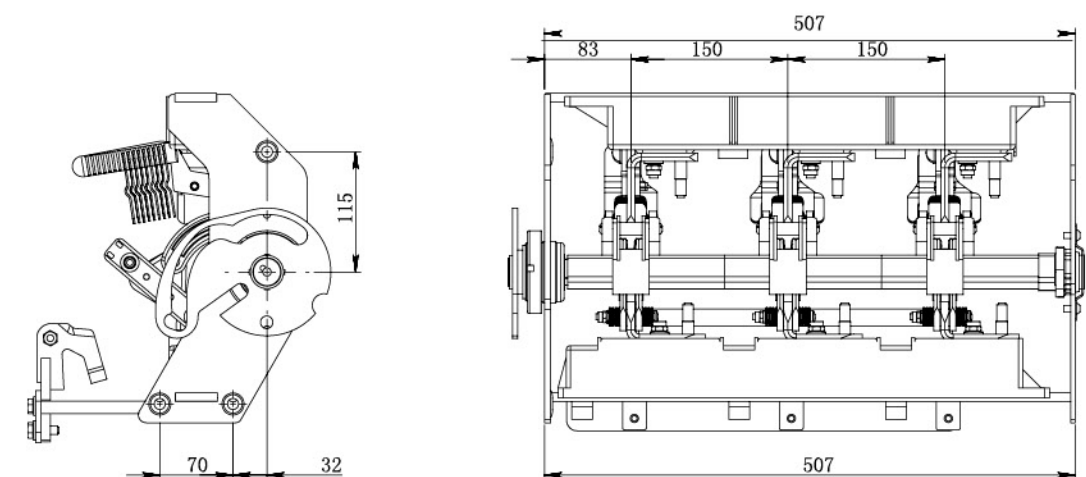
Working condition precautions

- Altitude $\leq 1000\text{m}$, Earthquake intensity ≤ 8 degree.
- Class of pollution: II.
- Ambient temperature: $-40^{\circ}\text{C} \sim +140^{\circ}\text{C}$; Relative humidity daily average $\leq 90\%$, monthly average $\leq 90\%$.
- Not applicable in the place with frequently violent vibrations, or water vapor, gas, chemically corrosive sediments, salt spray, dust and dirt, that would significantly affect the performance of the mechanism, or fire and explosion hazards.

Main technical specification

No.	Item	Unit	Data
1	Rated frequency	Hz	50
2	Rated current	A	630
3	Rated short time withstand current	KA	20/25
4	Rated peak withstand current	KA	50
5	Rated short circuit duration	s	4
6	Rated short circuit making current	KA	50
7	Theoretical operation	Times	5000

Outline and installation dimension of load switch





XGN15-12

AC Metal-enclosed switchgear

General

Sulfur hexafluoride switch is the master switch of AC Metal-enclosed switchgear of XGN15-12. The switchgear is air insulated and suitable for distribution automation. It is compact and extensible with simple structure, flexible operation, reliable operation and easy installation. It can be used in different places and meet the requirements of different users.

It adopts sensor technology, latest microcomputer protection, advanced technical function and flexible assembly plan. All of these make it meet the changing demands of the market.

The master switch could be FLN36 type and FLN48 type, SF6 load switch and ABB original SFG type. We could also use ABB original VD4/S, HD4/S and VS1 circuit breaker according to the users' demand.

XGN15-12 AC Metal-enclosed Switchgear

Working condition

- Altitude: $\leq 1000\text{m}$
- Ambient temperature: $-15^{\circ}\text{C} \sim +40^{\circ}\text{C}$
- Relative humidity: Daily average $\leq 95\%$;monthly average relative humidity $\leq 90\%$
- The surrounding air is free from corrosive gas and water vapour.
- Not applicable in the place with frequent violent vibrations.

Structural feature

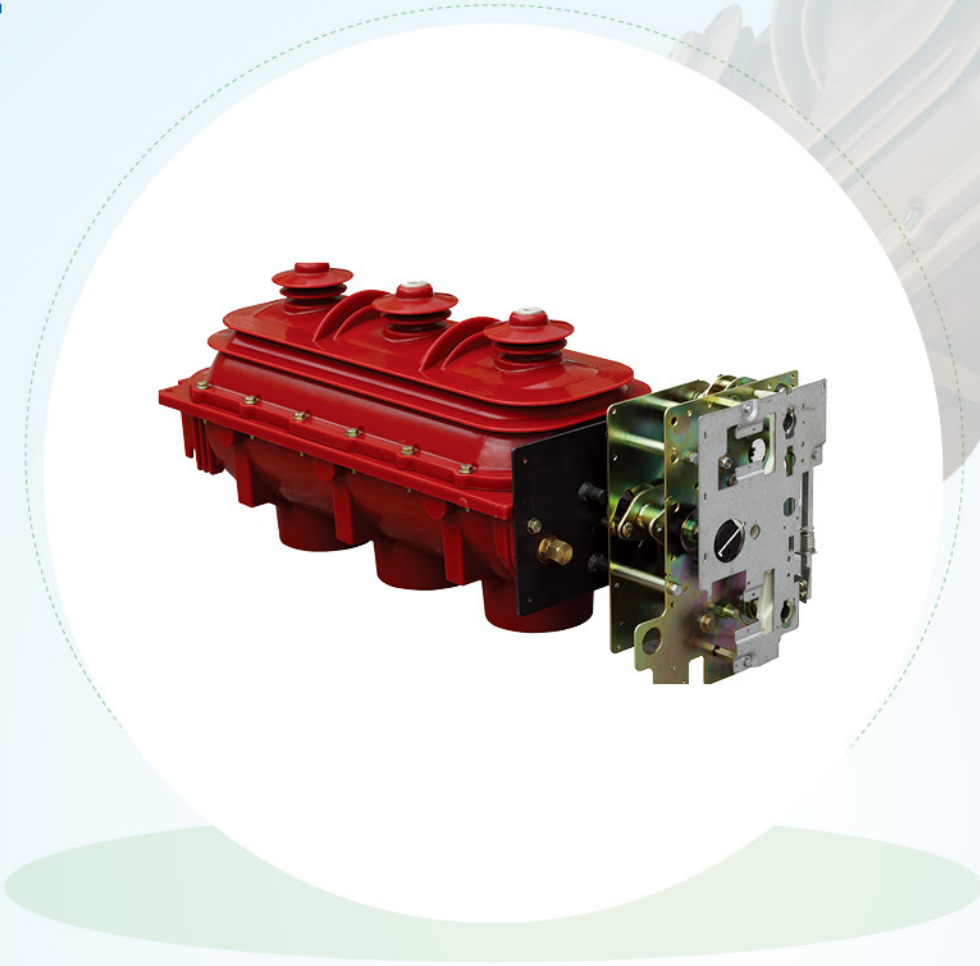
It consists of bus-bar compartment, load switch with three working positions or circuit breaker compartment, cable compartment, operation mechanism, interlocking device, low voltage control compartment, measuring or counter circuit and so on. Every compartment is separated by steel plate to avoid the influence of fault part.

It complies with technical requirements of GB3906/IEC298.

- Bus-bar compartment**
It is in the upper portion of the switchgear. In this compartment, the main bus-bar connects together, which is horizontal layout for easy stretch.
- Load switch compartment**
In the switchgear, there is a load switch with two or three working position. The cover of switch is made from epoxy resin. SF6 gas is filled in this compartment as the medium for arc extinction and insulation. Two transparent plastic covers by hot pressing are placed in the outlet of the shaft. From these covers, we could see the state of contact. SF6 gas density meter can be set up according to the customer's demand.
- Cable compartment**
This compartment is used for cable connection to connect one-core cable with the simplest unshielded cable head. There is also surge arrester, current transformer, earthing switch and many other components in this enough space. According to the standard of switchgear, observation window and safety interlock are installed on the panel. There is sealed cap and cable clamp with support on the baseboard.
- Operation mechanism, interlock device and low voltage controller**
The low voltage compartment with interlocking device can also be used as control panel. There is spring operating mechanism with position indicator and mechanical interlocking device in the low voltage compartment. Auxiliary contact, breaking coil, emergency trip mechanism, capacitance type live display, lock with keys and electric operation mechanism can be installed in the low voltage compartment. And at the same time, there is still space for control circuit, metering device and protect relay. In the switchgear of 750mm type, there are two same low voltage compartments for more components.

Main technical specification

No.	Item	Unit	Data	
			XGN15-12(F)	XGN15-12(F.R)
1	Rated voltage	KV	12	
2	Rated frequency	Hz	50	
3	Rated insulation level	1 min power frequency withstand voltage	To earth and phase to phase 42; Fracture 48	
		Lightning impulse withstand voltage (peak)	To earth and phase to phase 75; Fracture 85	
4	Rated current of main bus bar	A	630	
5	Rated current	A	630	125
6	Rated breaking current loop	A	630	
7	Rated active load current breaking current	A	630	
8	Rated charging breaking current	A	10	
9	Rated transfer current	A		1700
10	No-load transformer breaking capacity	KVA	1600	
11	Rated making current (peak)	KA	63	
12	Rated short time withstand current (2s)	KA	25	
13	Rated peak withstand current	KA	63	
14	Rated short circuit breaking current	KA		
15	Peak withstand current of ground loop	KA	63	31.5 (expected)
16	Short time withstand current of ground loop (2s)	KA	25	
17	Fuse type		S □ LAJ	
18	Auxiliary circuit voltage	V	DC220、110、AC220、110	
19	Protection		IP3X	
20	Mechanical life	Load switch	Times	5000
		Earthing switch	Times	2000



FLN36-12D/FLRN36-12D

SF6 Load Switch/ SF6 Load Switch-fuse Combination

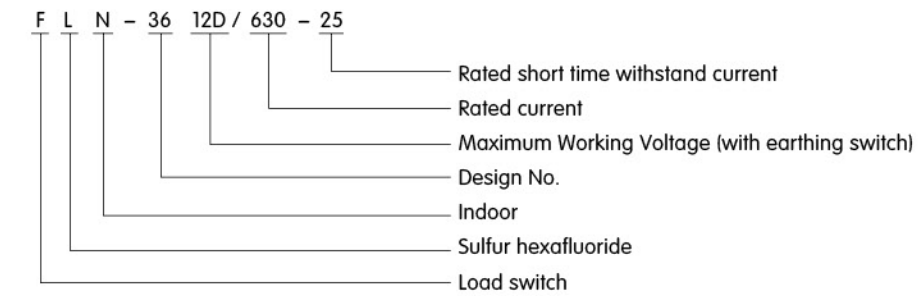
General

FLN36-12D is the main switch in the ring main unit. It complies with technical requirements of IEC 420, 694 and 129, GB3804-2004 "High-voltage Alternating-current Switches for Rated Voltage above 3.6 KV and less than 40.5 KV", GB1985-2004 "High-voltage Alternating-current Disconnectors and Earthing Switches", GB/T11022-1999 "Common Specifications for High-voltage Switchgear and Controlgear Standards".

FLN36-12D is a switch with closing, opening and grounding function. 0.05 MPa SF6 gas is filled into the epoxy shell with strengthening structure to realize these three functions with the least parts, which guarantees the quality and improve the reliability. It is maintenance-free and could run for 20 years safely in the normal condition.

FLN36-12D/FLRN36-12D SF6 Load Switch/ SF6 Load Switch-fuse Combination

Product definition



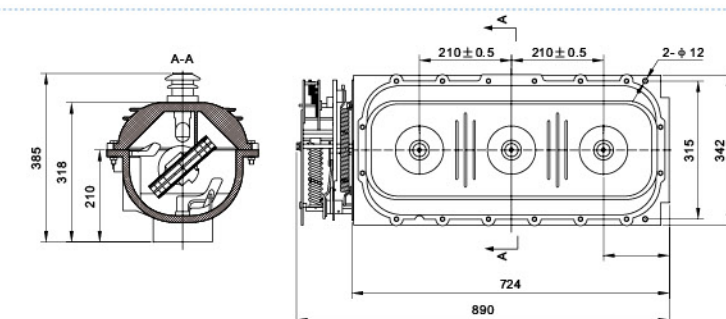
Functions and features

- The load switch adopts the structure with double fracture and rotary dynamic contact. There are three states: closing, opening and grounding.
- SF6 gas is adopted as the arc extinguishing and insulating medium. The major loop is sealed in the epoxy shell and the conductivity would not be influenced by the surroundings.
- It is a switch with good safety performance. If there is arcing inside the switchgear, the weak spot of the shell would be broken and the arc discharge shutter would be broken and the over pressure airflow would be released to the outside to ensure the safety inspection.
- Load switch is installed in the epoxy shell full with SF6 gas with closing, opening and grounding function. It is in a state of interlocking broke with compact structure and high security.
- It is small, light, maintenance-free and easy to operate.

Main technical specification

No.	Item	Unit	Data
1	Rated voltage	KV	12
2	Rated frequency	Hz	50
3	Rated current	A	630
4	Rated peak withstand current	KA	50
5	4s rated short time withstand current	KA	20
6	Rated making current	KA	50
7	Rated breaking current	KA	630
	Active load breaking current	A	630
	Breaking current loop	A	10
8	1 min power frequency withstand voltage (phase to phase, to earth, fracture)	KV	42/48
9	Lightning impulse withstand voltage (phase to phase, to earth, fracture)	KV	75/85
10	Relative pressure of SF6 gas (20°C GP)	MPa	≤ 0.04
11	Rated operating voltage (electric)	V	AC220、DC220
12	Rated voltage of shunt release	V	AC220、DC220
13	Average opening speed	m/s	3.5 ± 1.5
14	Average closing speed	m/s	3.5 ± 1.5
15	Three-phase points, closing phase of the same	ms	≤ 3
16	The main circuit resistance	μ Ω	≤ 120
17	Manual maximum torque	N.m	≤ 160
18	Phase to phase center distance	mm	210 ± 0.5

Outline and installation dimension of load switch





FLN48-12D/FLRN48-12D

Indoor High Voltage SF6 Load Switch

General

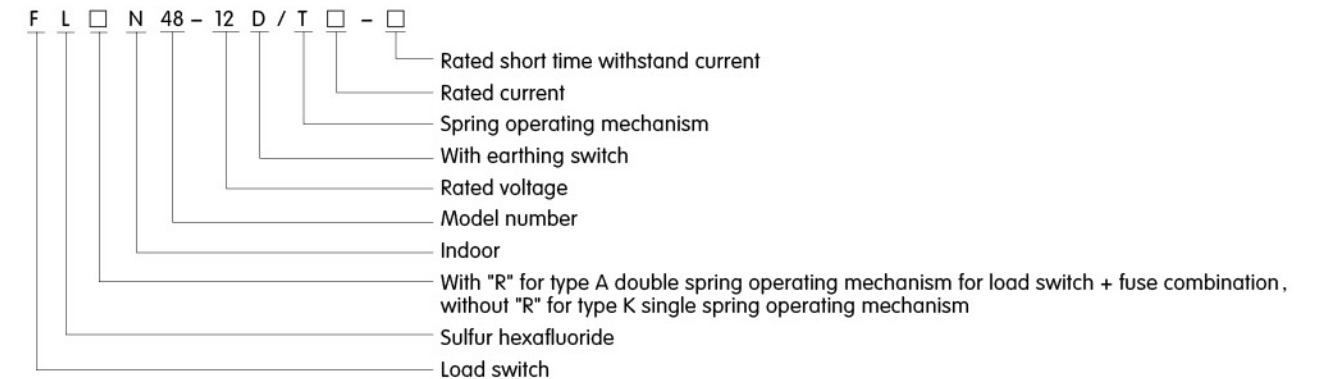
This series of load switch is developed by our company in 2003 and is applied to XGN14-12SF6 ring main unit. It has high economy, safety, reliability, simple structure, flexible operation, reliable interlocking and convenient installation. It meets the standard of IEC60694、GB3804、GB16926 etc.

Working condition

- Ambient temperature: Max.+40℃ ; Min.-35℃ .
- Humidity: Maximum average relative humidity daily average: ≤ 95%; monthly average: ≤ 90%.
- Altitude: ≤ 2000m.
- Seismic resistance: 8 degree.
- The surrounding air should be free from corrosive, flammable gases, water vapor, etc., and should not be subjected to frequent and severe vibrations.
- Annual leakAge rate: ≤ 0.1%.

FLN48-12D/FLRN48-12D Indoor High Voltage SF6 Load Switch

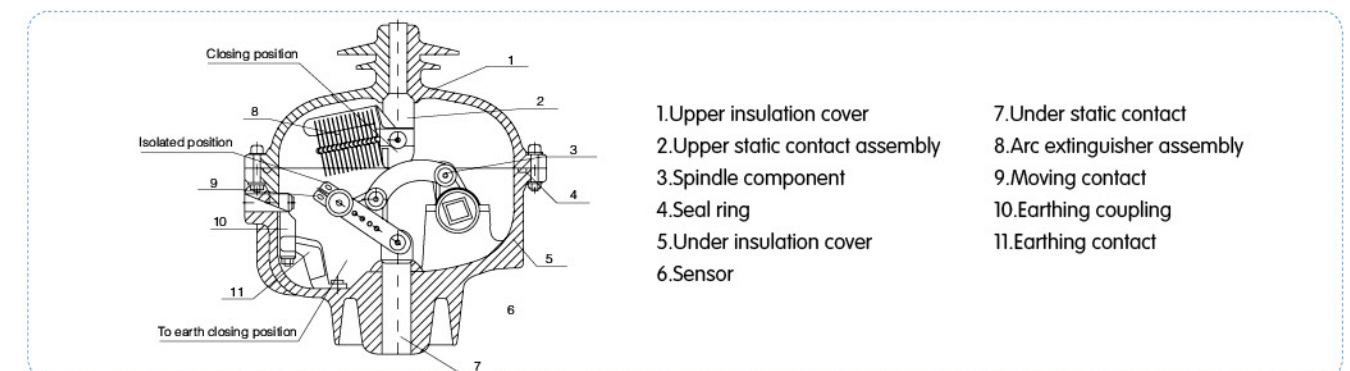
Product definition

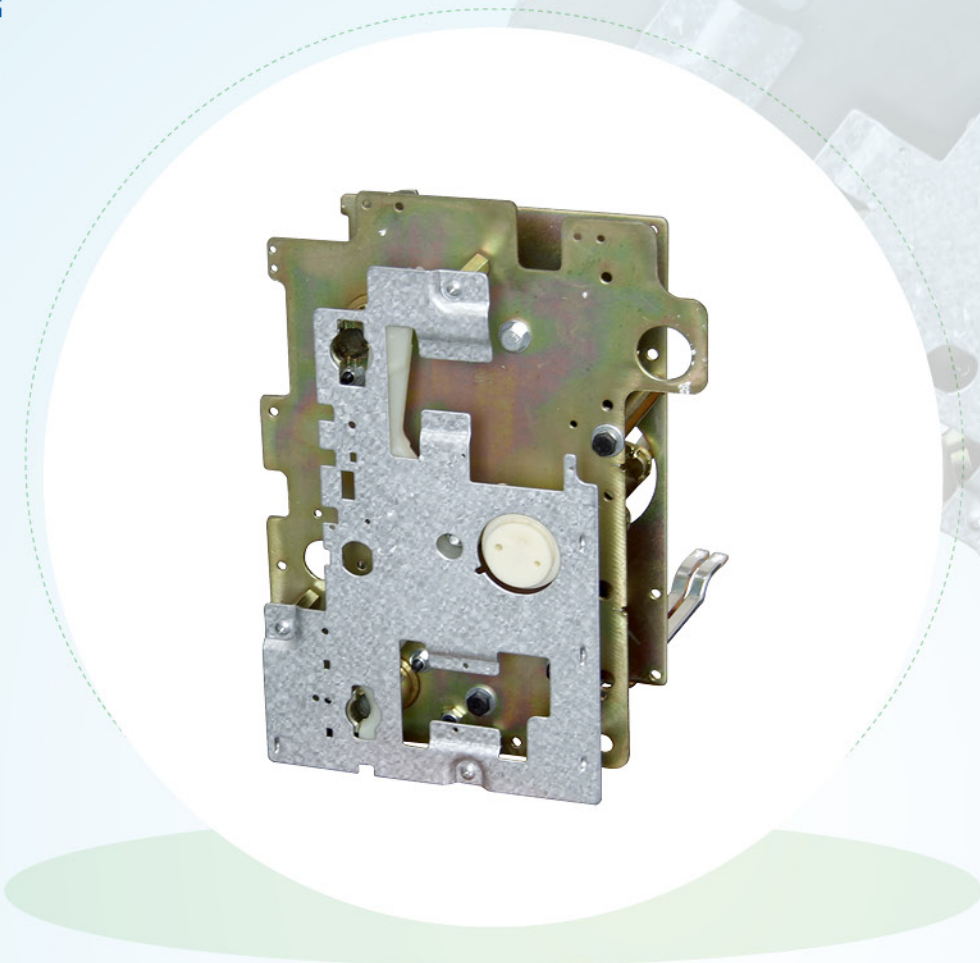


Main technical specification

Item	Unit	FLN48-12D/T630-20 type load switch	FLRN48-12D/125-50 type load switch-fuse combination unit
Rated voltage	KV	12	12
Rated frequency	Hz	50	50
Rated current	A	630	125
1 min Power frequency withstand voltage, to earth, phase to phase/Fracture	KV	42/48	42/48
Lightning impulse withstand voltage, to earth, phase to phase/Fracture	KV	75/85	75/85
5min Zero gauge pressure rated power frequency withstand voltage	KV	24	24
Rated thermal stability current 3s/2s load switch/earthing switch	KA	20/20	20/20
Rated dynamic current(peak) load switch/earthing switch	KA	50/50	50/50
Rated short circuit closing current load switch/earthing switch	KA	50/50	125/50
Rated closed-loop breaking current	A	630	
Rated active load breaking current	A	630	
Rated cable charging breaking current	A	10	10
Rated short circuit breaking current	KA		50*
Rated transfer current	A		1700
Fuse type			XRNT-12KV/100A*
Fuse impact output energy	J		1 ± 0.5
Mechanical life load switch/earthing switch	Times	5000/2000	3000/2000
Air insulation distance between charged body and to earth	mm	≥ 125	≥ 125
SF6 gas pressure(20℃ relative pressure)	bar	0.4	0.4
Opening and closing synchronization	ms	≤ 2	≤ 2
Main loop resistance	μ Φ	≤ 65	≤ 65

Outline and installation dimension





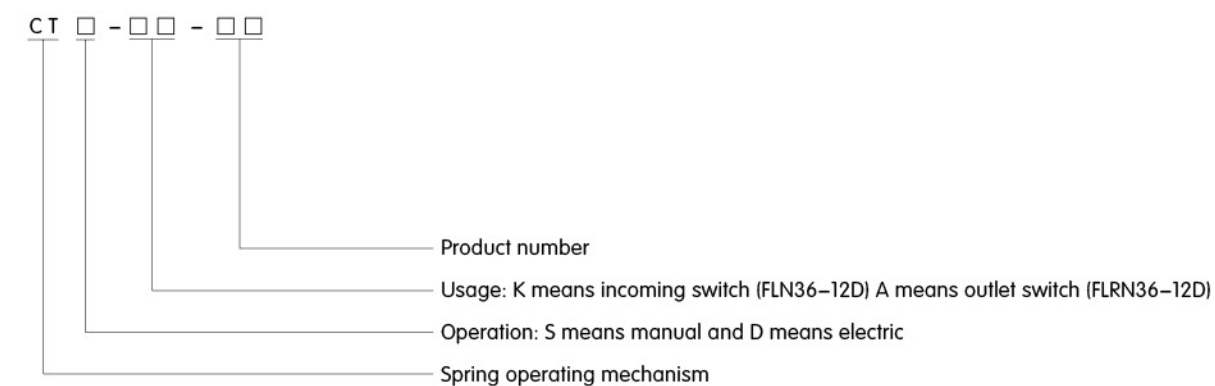
CT □-□ K Type Spring Operating Mechanism

General

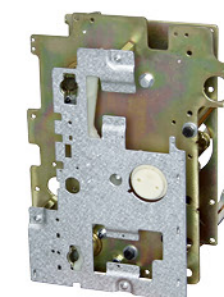
CT □ type spring operating mechanism is suitable for indoor high voltage SF6 load switch of FLRN36-12D/T100-31.5 and FLN36-12D/630-20 and matching units with 12KV rated voltage. There are three working positions. They are closing, opening and grounding. The mechanism is easy to install with moderate size and good applicability. Fuse may open while it breaks and shunt release could be installed. It complies with technical requirements of GB3804-1990 "AC high voltage switches for rated voltages from 3KV to 63KV" and GB16926-1997 "High-voltage alternating current switch-fuse combinations".

CT □-□ K Type Spring Operating Mechanism

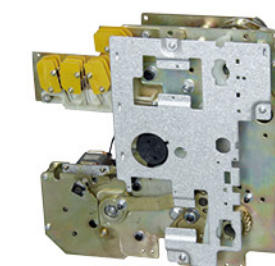
Product definition



CT □-□ K Type spring mechanism



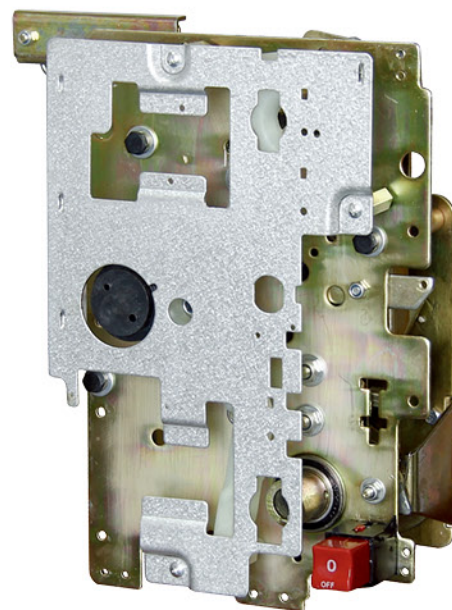
CT □ -SK
Manual incoming spring mechanism



CT □ -DK
Motor incoming spring mechanism

Operation specification

- Closing operation of load switch
Insert the handle into the hole of closing shaft in the lower right corner and rotate it 180° clockwise. The contact would be driven by the mechanism to finish the closing operation of the load switch.
- Opening operation of load switch
Rotate the handle 180° counterclockwise to finish the operation.
- Grounding operation of load switch
Insert the handle into the hole of grounding shaft in the top right corner and rotate it 180° clockwise. The contact would be driven by the mechanism to finish the grounding operation of the load switch. Rotate the handle 180° counterclockwise to finish the operation.



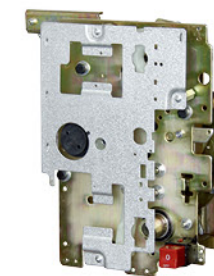
CT □-□ A Type Spring Operating Mechanism

General

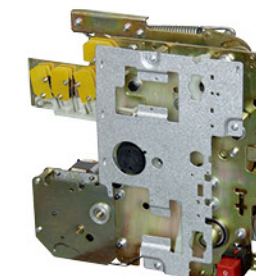
CT □ type spring operating mechanism is suitable for indoor high voltage SF6 load switch of FLRN36-12D/T100-31.5 and FLN36-12D/630-20 and matching units with 12KV rated voltage. There are three working positions. They are closing, opening and grounding. The mechanism is easy to install with moderate size and good applicability. Fuse may open while it breaks and shunt release could be installed. It complies with technical requirements of GB3804-1990 "AC high voltage switches for rated voltages from 3KV to 63KV" and GB16926-1997 "High-voltage alternating current switch-fuse combinations".

CT □-□ A Type Spring Operating Mechanism

CT □-□ A Type spring mechanism



CT □ -SA
Manual incoming spring mechanism



CT □ -DA
Motor incoming spring mechanism

Operation specification

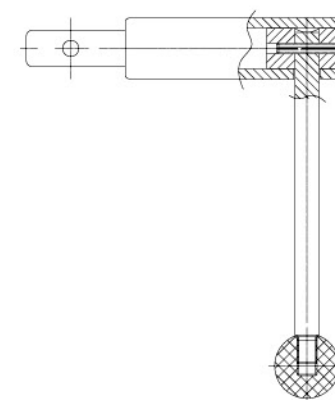
- Closing operation of load switch
Insert the handle into the hole of closing shaft in the lower right corner and rotate it 180° clockwise. The contact would be driven by the mechanism to finish the closing operation of the load switch. And at the same time the spring stores energy for the preparation of opening.
- Opening operation of load switch
Press the opening button to let the opening spring release the energy. And the main shaft would be driven by the mechanism to finish the opening operation quickly.
- Grounding operation of load switch
CT...C/X A spring operating mechanism is the same as CT...- K.

Note: 1. Outlet spring operating mechanism has fuse release, manual opening button and could add shunt release too.

2. Please specify the voltage while ordering, for example, DC220V, DC110V, DC48V, DC24V and so on.

3. Please specify the voltage while ordering, for example, DC220V, DC110V, DC48V, DC24V and so on, if you need shunt release. Without indication, we would deliver shunt release the same as the motor mechanism's voltage.

YF.253.027 Operating handle



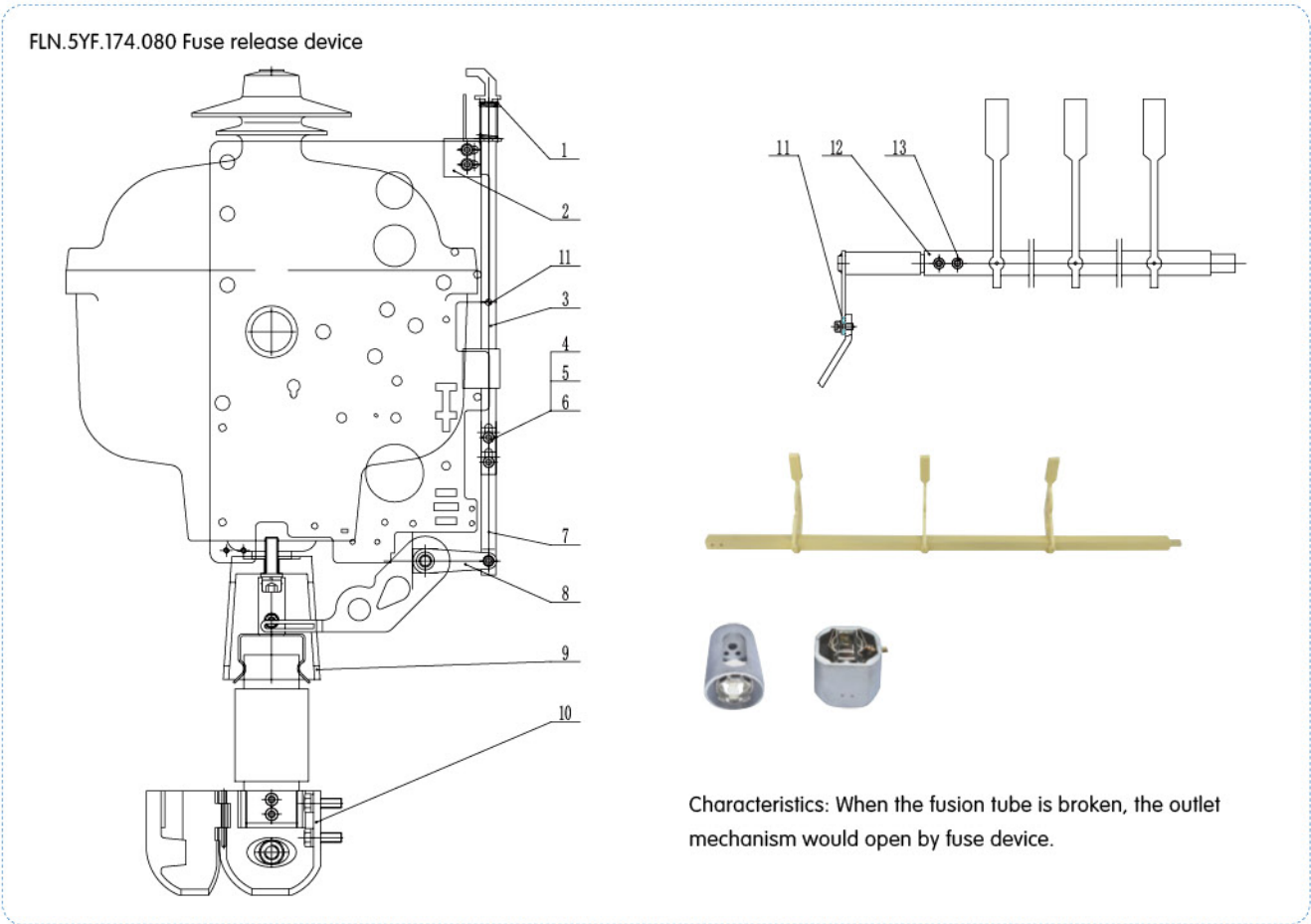
Characteristics: It is used for the manual operation of spring operating mechanism of FL(R)N36-12D.

YF.362.007 Lower door interlocking



Characteristics: It is used for the connection of mechanism and the switch and lower door interlocking

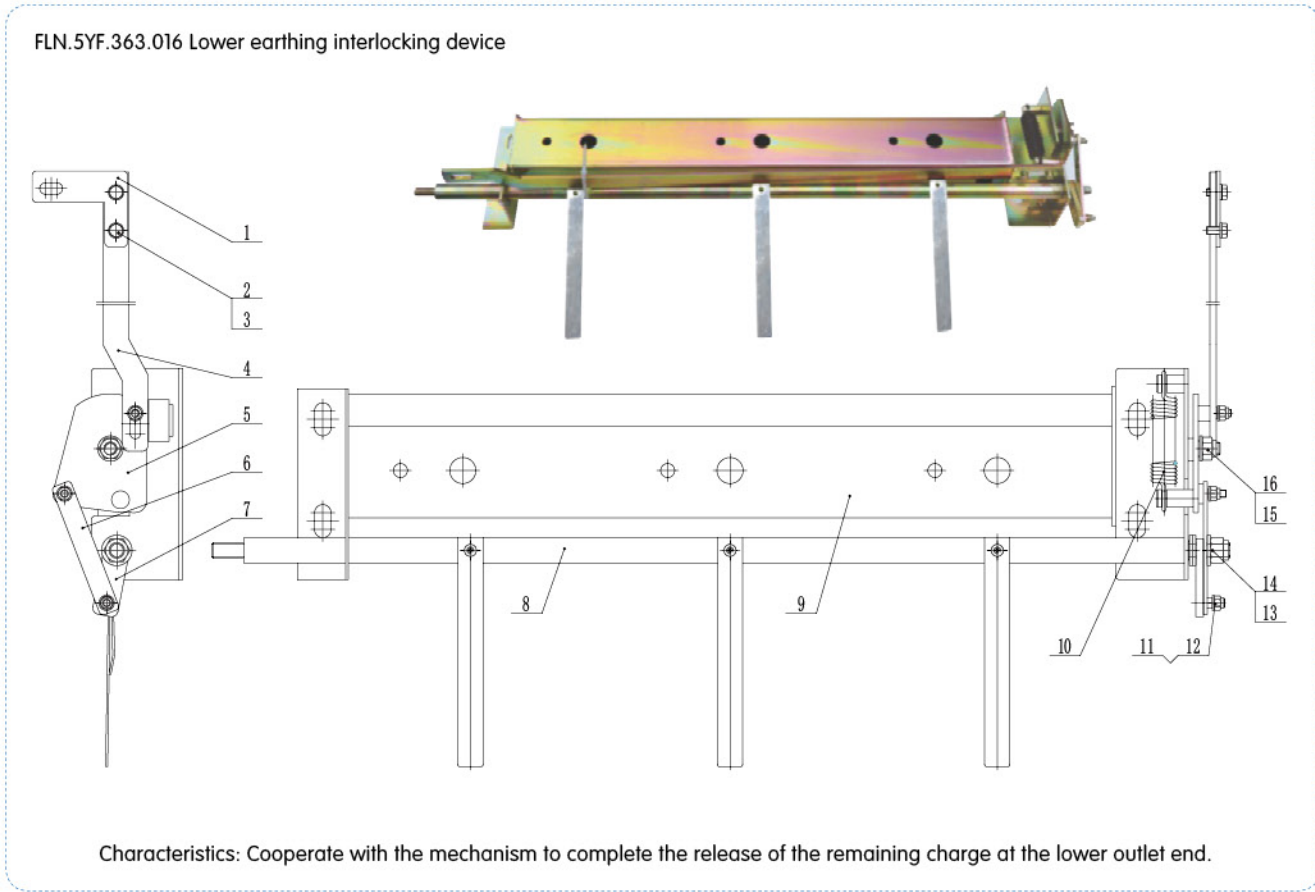
» Fuse release device



» FLN.5YF.174.080 Assembly of fuse release device

No.	Item	code	Qty	Remarks
1	Reset spring	8XS.288.083F	1	
2	Upper fixed plate	fLN.8YF.100.081	1	
3	Connecting plate	fLN.8YF.174.078	1	
4	Gasket	gB93-1987	5	
5	Screw m5x12	gB/T 2672-2004	5	
6	Flat gasket	gB/T97.1-2002	5	
7	Trip indicator board	fLN.8YF.174.079	1	
8	Trip rod group	5XS.233.002F	1	
9	Upper fuse holder assembly	fLN.5YF.045.005	3	
10	Lower outlet holder assembly	5XS.104.010F	3	
11	Sleeve	8XS.263.017F	2	
12	Trip rod assembly	fLN.5YF.174.079	1	
13	Screw m5x20	gB/T 70.1-2000	2	

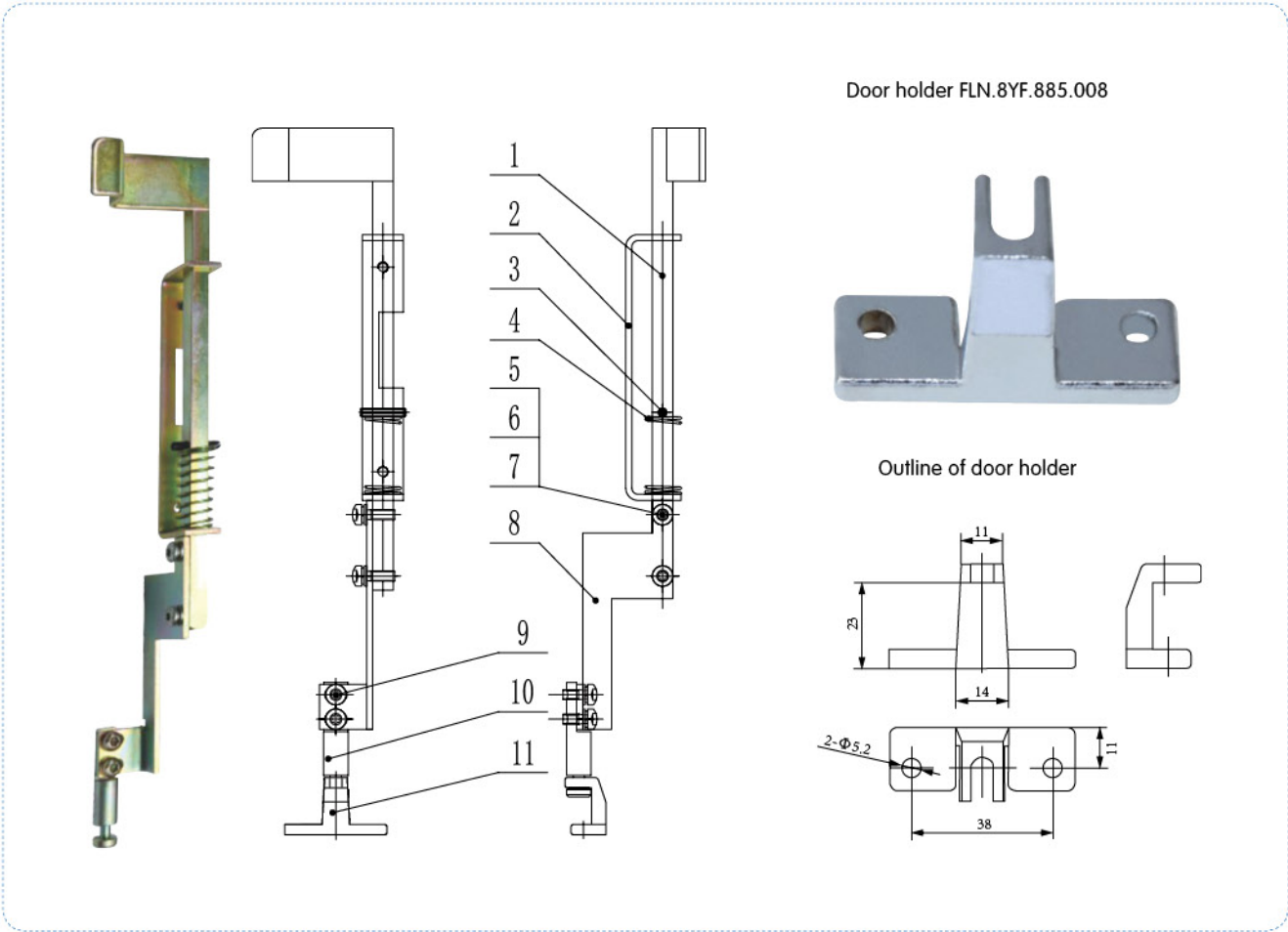
» Lower earthing interlocking device



» FLN.5YF.363.016 Assembly of lower earthing interlocking device

No.	Item	Code	Qty	Remarks
1	Connecting plate	FLN.8YF.135.082	1	
2	Bolt M5X12	GB/T5783-2000	2	
3	Flat gasket A class 5	GB/T97.1-2002	2	
4	Grounding strip	FLN.8YF.137.010	1	
5	Welding of lower earthing interlocking blocks	FLN.5YF.143.001	1	
6	Bottom earthing plate	FLN.8YF.137.012	1	
7	Welding of lower earthing plate	FLN.5YF.150.038	1	
8	Lower earthing knife switch	FLN.5YF.566.002	1	
9	Welding of mounting rack	FLN.5YF.042.001	1	
10	Earthing interlocking spring	FLN.8YF.288.055	1	
11	Nut M6	GB/T 889.1-2000	3	
12	Flat gasket A class 6	GB/T97.1-2002	3	
13	Nut M12	GB/T 889.1-2000	1	
14	Flat gasket A class 12	GB/T97.1-2002	3	
15	Nut M10	GB/T 889.1-2000	1	
16	Flat gasket A class 10	GB/T97.1-2002	1	

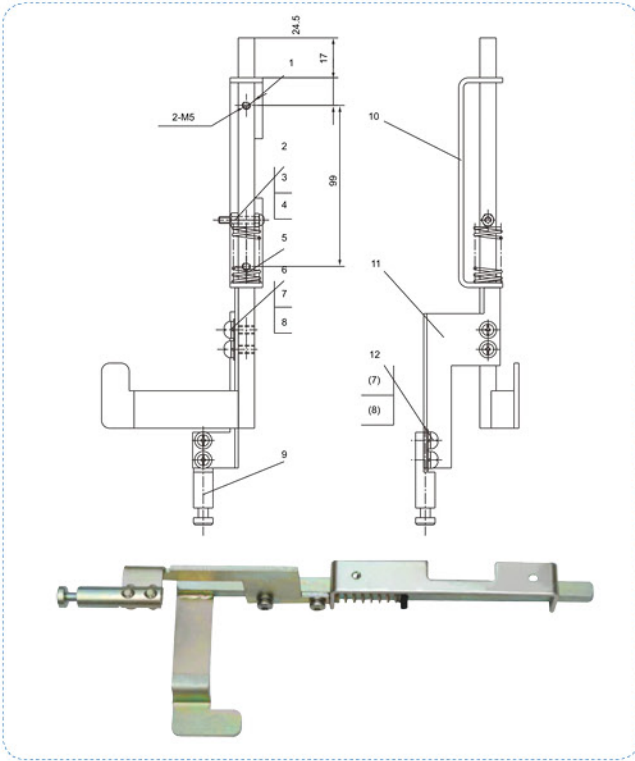
» Lower door interlocking FLN.5YF.362.016



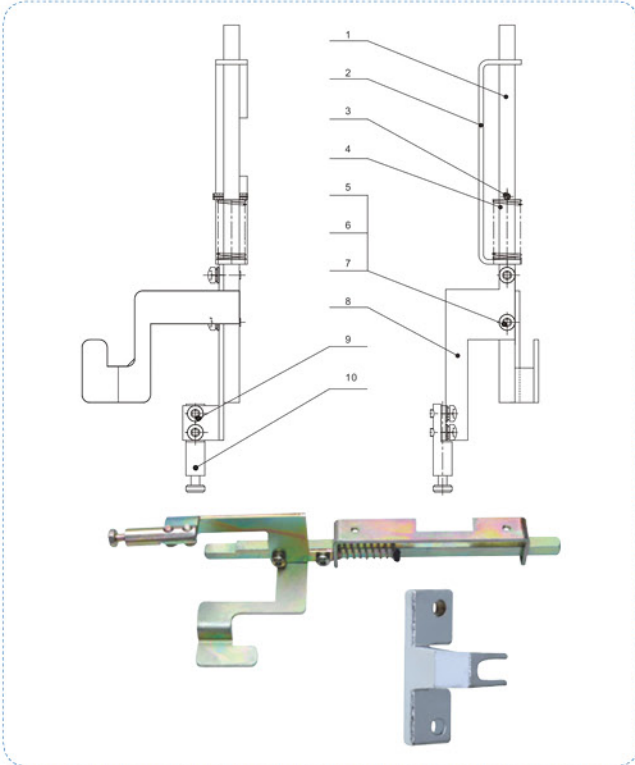
» FLN.5YF.362.016 Assembly of lower door interlocking

No.	Item	Code	Qty	Remarks
1	Welding of slider	FLN.5YF.174.081	1	
2	Guide rail	FLN.8YF.260.051	1	
3	Elastic cylindrical pin 4X22	GB/T 879.1-2000	1	
4	Reset spring	FLN.8YF.282.095	1	
5	Screw M5X16	GB/T 2672-2004	2	
6	Standard spring washer	GB/T 93-1987	4	
7	Flat gasket A class 5	GB/T 97.1-2002	4	
8	Pulling plate	FLN.8YF.137.009	1	
9	Screw M5X12	GB/T 2672-2004	2	
10	Pull rod	FLN.8YF.174.082	1	
11	Door holder	FLN.8YF.885.008	1	

» FLN.5YF.363.295 Lower door interlocking with two working positions (incoming)



» FLN.5YF.363.296 Lower door interlocking with two working positions (outlet)



» FLN.5YF.363.295 Assembly of lower door interlocking with two working positions

No.	Item	Code	Qty	Remarks
1	Welding of connecting rod	5WYF.206.293MS	2	
2	Bolt M4X25	GB/T 818-2000	1	
3	Nut M4	GB/T 5781-2000	1	
4	Nut with self-locking M4	GB/T 6184-2000	1	
5	Pressure spring	8WYF.282.291MS	4	
6	Bolt M6X15	GB/T 818-2000	4	
7	6 Flat gasket	GB93-87	2	
8	6 Spring washer	GB95-85	1	
9	Connecting shaft	8WYF.206.293MS	1	
10	Connecting plate	8WYF.135.301MS	1	
11	Connecting plate	8WYF.135.300MS	1	
12	Bolt M6X10	GB/T 818-2000	1	

» FLN.5YF.363.296 Assembly of Lower door interlocking with two working positions

No.	Item	Code	Qty	Remarks
1	Welding of connecting rod	FLN.5YF.206.294	1	
2	Guide rail	FLN.8YF.260.051	1	
3	Elastic cylindrical pin	GB/T 879.1-2000	1	
4	Reset spring	FLN.8YF.282.095	1	
5	Bolt M5X16	GB/T 2672-2004	2	
6	Standard spring washer 5	GB/T 93-1987	4	
7	Flat gasket A class 5	GB/T 97.1-2002	4	
8	Pulling plate	FLN.8YF.137.009	1	
9	Bolt M5x12	GB/T 2672-2004	2	
10	Pulling rod	FLN.8YF.174.082	1	