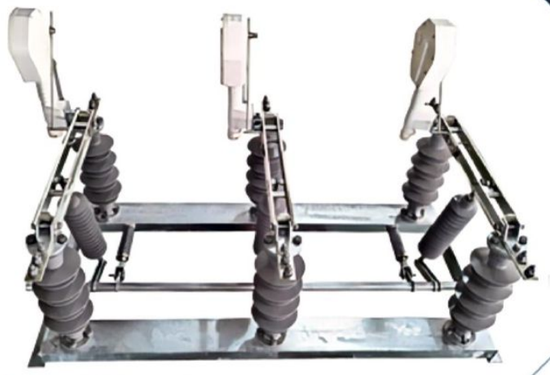
XIKAI

Load Break Switch

Breaking and closing load current



Constructing
World Bridge of Power System,
Providing Excellent Products From
XIYA

Key Of Power Electric Professional

- Composite Insulator
- Disconnecting Switch
- SF6 & Vacuum Circuit Breaker
- Surge Arrester
- Fitting&Clamp (Hardware)
- Wall Bushing
- Loadbreak Switch
- Fuse Cutout
- Whole Set Cabinet
- Cable Accessories

XIKAI

XIYA ELECTRIC EQUIPMENT CO.,LTD.
Add:Xiangyang Industrial Zone,Liushi,Zhejiang CN P.C.:325604
Tel:0086-577-62600886 E-mail:xk@cnxiya.com
Website:www.cnxikai.com / www.xiyapower.com
Wechat/WhatsAPP:+86-137 3631 0909

CONTENTS

CONTENTS

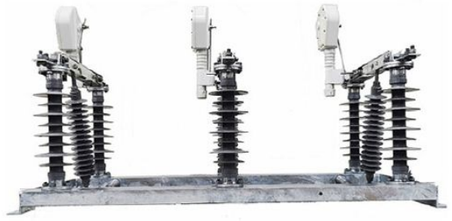
Outdoor Load Break Switch

Indoor Load Break Switch

Outdoor Load Break Switch

FKW17 Series Outdoor High Voltage Load Switch

Key of Power
Electric Professional
>



General

FKW17 Outdoor on load break switch (switch disconnector) contained in this list are destined to switch stub lines and ring main lines or transformers(It can be equipped with MV HRG fuse links as short circuit protection function) or for switching under on load conditions.

FKW17 switch comply with IEC/IEEE and DVE–recommendation standards. Especially comply with DIN VDE 0670 part 3 and IEC publication IEC–60265, IEC–129.

Service Environment

a) Airtemperature: Maximum temperature: +75℃ ; Minimum temperature:–45℃
b) Humidity: Monthly average humidity 95% ; Daily average humidity 90%.
c) Altitude above sea level: Maximum installation altitude: 2500m.
d) Ambient air not apparently polluted by corrosive and flammable gas, vapor etc.
e) No frequent violent shake.

Features And Benefits

Compact design
All steel parts either in stainless steel or hot–dip galvanized
Solid and stable base frame
Main contact with icing protection
Insulators available in porcelain or alternatively in silico ne
Minimal sag for the line–connection thanks to the two fixed terminals
Completely maintenance antirust AL alloy –Arc chamber
Switching–off procedure without external arc
Short circuit making capacity under specific conditions possible
Fixing on the supporting structure either by clamping (free setting) or screwing (holes in the base frame)
Easy on–site installation and setting
High reliability: up to 1'000 cycles (depending on the making current)

Technical Data

Sheet 1

Item		Unit	Data		
Rated voltage		kV	12	24	36
Rated frequency		Hz	50/60		
Ratedcurrent		A	200/400/630		
Rated short circuit withstand current(IS)		kA	20		
Rated peak withstand current(IS)		kA	50		
Rated making current		kA	31.5–50		
Rated insulation leve(HV)	lightning impulse	kA	75/85	125/145	170/195
	Power frequency withstand		45	55/75	75/100
Rated short circuit breaking capacity cos. Φ(0.7) Without maintenance of contacts					
For active circuits	20breakings	A	630	630	400
	30breakings		400	400	300
	40breakings		300	300	250
	50breakings		250	250	170
	75breakings		170	170	160
	120breakings		110	110	110
	200breakings		65	65	65
	280breakings		50	50	50

XIKAI®

Key of Power
Electric Professional
>

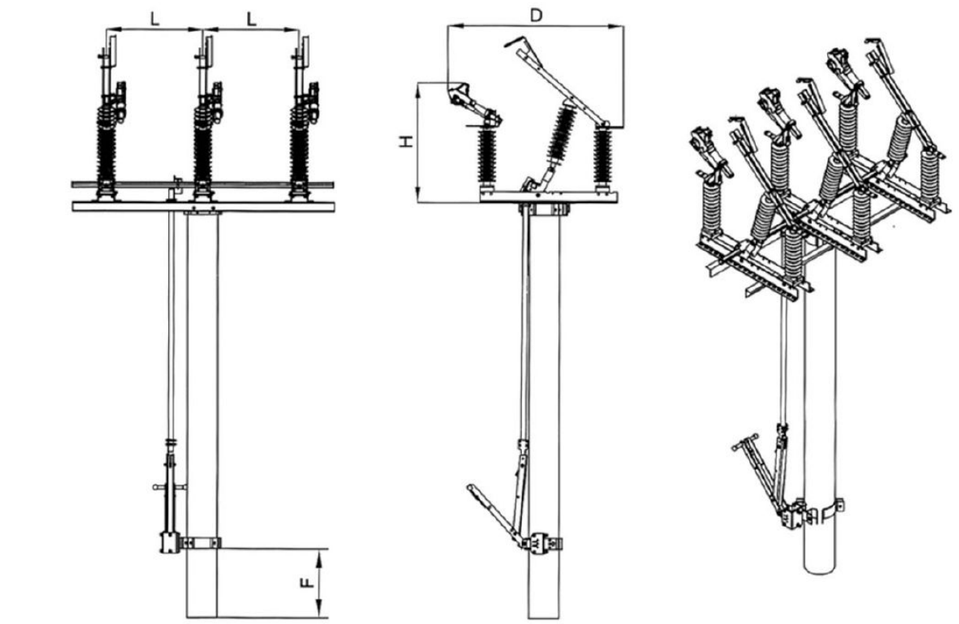
Outdoor Load Break Switch
FKW17 Series Outdoor High Voltage Load Switch

Sheet 2

Item	Unit	Data		
Rated voltage	kV	12	24	36
For ring circuits	A	630	400	250
Rated breaking capacity of transformer	A		50	
Rated breaking capacity of cable charging	A		11	
Rated breaking capacity of earthing fault	A		56	

Note: The LBS type on load break switch (Switch disconnector) is equipped with stored energy released by fuse strike pins. The stored energy mechanism for the opening oparation is relaased by fuse strike pins.
The trip actuator is mounted on top of the fuse contact clip.
The DIN type fuse is held in spring type contacts, secured by a tail lever. All the components are made of stainless steel, to preventcorrosion, have Jong live, and in the reset position. The trip lever is parked in an over–centre position.

Outline Dimenssion

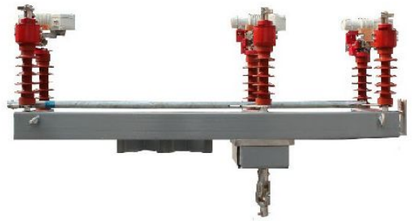


Electric parameter:
Rated voltage:12kV–24kV–36kV
Rated current: 630A–1250A
Power frequency withstand: 42/65/95kV
Lighting impluse withstand voltage: 95/150/215kV
Short circuit withstand: 20/25kA

Type	C	D	F	H	L	W
FKW17-12	800	1080	1200	670	775	1100
FKW17-24	900	1180	1200	770	450	1400
FKW17-36	1000	1280	1200	870	700	1900

Outdoor Load Break Switch

FKW18-12/24/40.5 Series Outdoor HV Load Break Switch



Summary

FKW18-12/24/40.5 outdoor AC high voltage load break switch is used in rated voltage12/24/40.5kV, rated frequency 50/60Hz outdoorthree-phase power system. The load break switch is composed of disconnectblade, arc extinguishing chamber and operation mechanism, simple structure, strong extinguishing arc ability, reliable performance, etc. NOTE: The model of the 12kV(vertical break) Outdoor HV Load Break Switch is FHY3-12.

Ambient condition

1. Altitude: ≤3000m;
2. Ambient temperature: -25℃~+40℃;
3. Wind speed: ≤35m/s;
4. Pollution degree: ≤IV ;
5. Earthquake intensity: ≤8 degree;
6. Ice thickness: ≤10mm.

Model

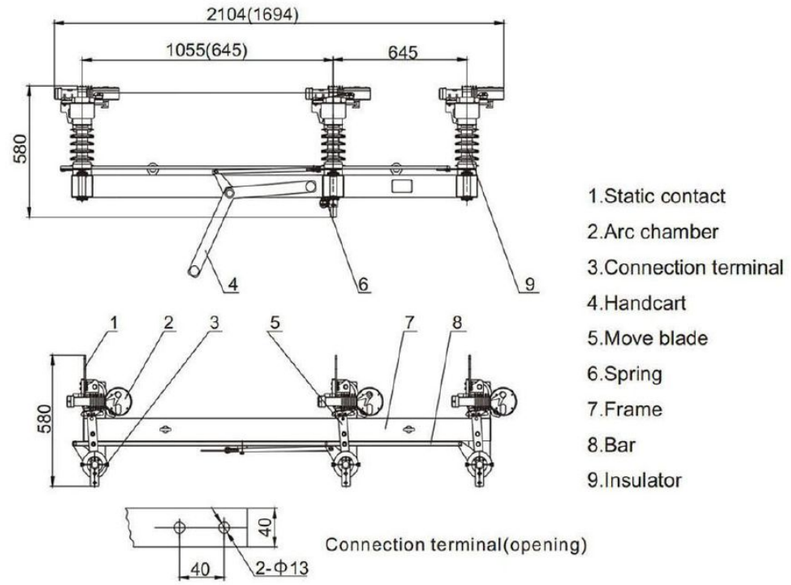
F K W 18 - □ / □ - □

- Rated short-time withstand current
- Rated current
- Rated voltage
- Design serial No.
- Outdoor
- Insulating medium
- Load break switch

Technical specification

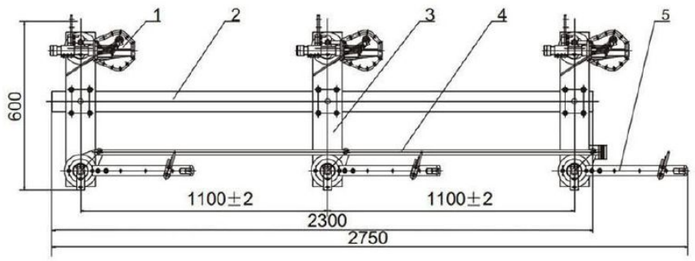
No.	Item			Unit	Data		
1	Rated voltage			kV	12	24	40.5
2	Rated current			A	630		
3	Rated power frequency			Hz	50/60		
4	Rated peak withstand current			kA	50		
5	Rated short-time withstand current			kA	20		
6	Rated short-circuit duration			s	4		
7	Rated active load breaking current			A	630		
8	Rated loop breaking current			A	630		
9	Rated cable charging current			A	10		
10	5% rated active load breaking current			A	31.5		
11	Rated power transformer breaking current			A	1250		
12	Rated short-circuit making current			kA	50		
13	Main loop resistance			μΩ	≤90	≤95	≤95
14	1min power frequency withstand voltage	Dry	phase to phase, to earth	kV	42	65	95
			across open contacts		49	79	115
		Wet	phase to phase, to earth		30	63	85
15	Lightning impulse withstand voltage(peak)		phase to phase, to earth	kV	75	125	185
			across open contacts		85	145	215
16	Mechanical life			Times	2000		
17	Three phase O/C asynchronous			ms	≤5		
18	Voltage, power of motor			V / W	≃220		≤200
19	Closing direction deflexion of blade			mm	≤2		
20	Main blade pressure			N	420 ±42		
21	Rated operating moment			Nm	≤300		

Outline dimension

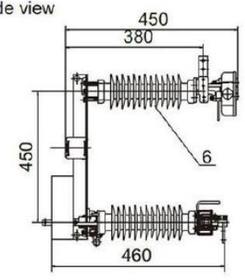


1.Static contact
2.Arc chamber
3.Connection terminal
4.Handcart
5.Move blade
6.Spring
7.Frame
8.Bar
9.Insulator

Drawing 1 12kV Switch structure (closing)



Left side view

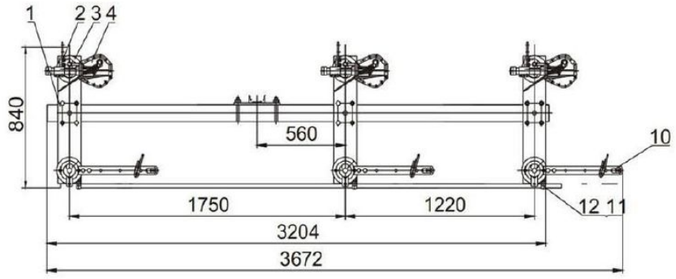


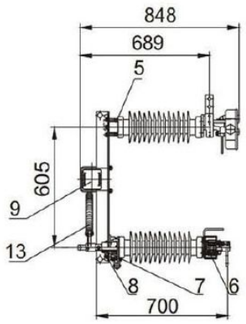
6	Insulator
5	Move blade
4	Link bar
3	Installation plate
2	Cross-girder
1	Arc chamber

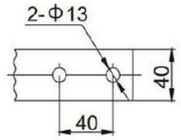
Drawing 2 24kV Switch structure

Outdoor Load Break Switch

FKW18-12/24/40.5 Series Outdoor HV Load Break Switch







Connection terminal (opening)

1.Frame
2.Static contact
3.Insulator
4.Arc chamber
5.Bushing
6.Connection terminal
7.Rotate bearing
8.Bushing
9.Bend-plate
10.Disconnect blade
11.Bar
12.Connection terminal
13.Spring

Drawing 3 40.5kV Switch structure (closing)

Structure feature

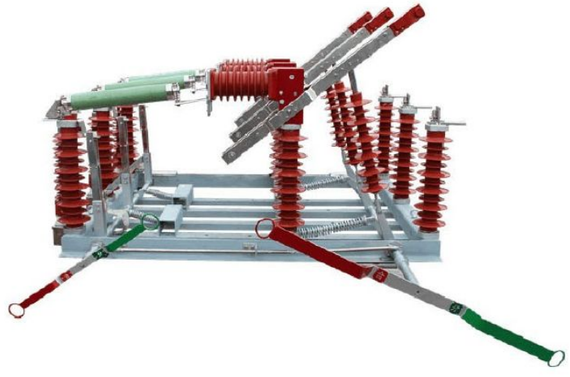
FKW18-12/24/40.5 outdoor alternating current high voltage load break switch is composed of disconnect blade, arc extinguishing chamber and operating mechanism. Arc extinguishing chamber is made of insulating materials with merits of high electric performance, arc-endurance, high strength. Built-in linking spring with fast acting mechanism to ensure breaking of load current effecting free from operating speed, fast or slow. The arcing gap and disconnecting gap of the load breaker switch is parallel in the course of opening and closing, so the arcing gap is only used to extinguish arc, no task for carrier current, simplifying arcing structure; however the disconnect gap only takes on task for carrier current and short-circuit closing, not participating in extinguishing arc, so simple in structure and long in lifetime. In this way, the load break switch can be used as disconnect switch when don't consider the action of arcing gap, and with the action of arcing gap, the disconnect switch is changed into load break switch. This load break switch adopts manual linking rod or motor operating mechanism to operate, and to lock up location of opening & closing. There is visible gap of switch after opening to produce functions of isolating and protection. The LBS could be mounted on pole outdoor, could suit for pollution with IV degree, horizontal or vertical installation, very convenient for setting cables outdoor with few maintenance and arc extinguishing chamber breaking load without maintenance for 100 times. The A, B, C three-phase of the load breaker switch is in turn installed on one great sectional galvanized square steels base, joint together with one integrative drive axis inter-phase to ensure for closing & opening three poles synchronously. The blade of the switch uses press spring, to assure enough connection pressure to the contact, in this way, operation is convenient and the blade is stable, in the same time, the reliability of opening-closing operation is guaranteed. The switch opens or closes under rated load current, not requires connecting secondary protection device.

XIKAI®

Key of Power
Electric Professional
>

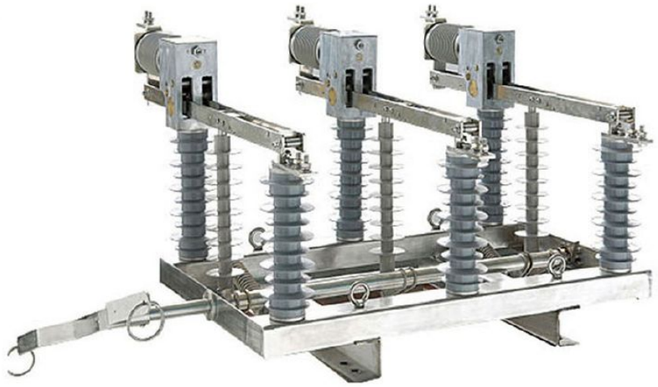
Outdoor Load Break Switch

Other related products



Outdoor Vacuum Load Break Switch

FKW32-12/24/40.5 Series Isolating Vacuum Load Break Switch



Summary

FZW32-12/24/40.5 Outdoor AC high voltage disconnect vacuum load break switch is a new product adopts domestic existing mature load break switch production experience and overseas advanced technology to design and manufacture. the load break switch is composed of disconn ect blade, vacuum interrupter and operation mechanism. vacuum extinguishing arc, there are merits as strong extinguishing arc ability, reliable performance, long lifetime, small volume, no explosive danger and no pollution to environment. It accords with standards of IEC62271-103 High voltage switches.

Model

F Z W 32 - □ / □ - □

- Rated short-time withstand current
- Rated current
- Rated voltage
- Design serial No.
- Outdoor
- Insulate medium (vacuum)
- Load break switch

Ambient condition

1.Altitude: ≤1000m;
2.Ambient temperature: -30℃~+40℃;
3.Wind speed: ≤34m/s;
4.Pollution degree: ≤IV ;
5.Earthquake intensity: ≤8 degree;
6.Ice thickness: ≤10mm.

Technical specification

No.	Item			Unit	Data	
1	Rated voltage			kV	12/24	40.5
2	Rated current			A	630	1250
3	Rated power frequency			Hz	50/60	50/60
4	Rated peak withstand current			kA	50	63
5	Rated short-time withstand current			kA	20	25
6	Rated short-circuit duration			s	4	4
7	Rated active load breaking current			A	630	1250
8	Rated loop breaking current			A	630	1250
9	Rated cable charging current			A	10	10
10	5% rated active load breaking current			A	31.5	63
11	Rated power transformer breaking current			kVA	1250	1250
12	Rated short-circuit making current			kA	50	63
13	Main loop resistance			μΩ	≤90	≤100
14	1min. power frequency withstand voltage	Dry	phase to phase phase to earth	kV	42/50	95
			across open contacts	kV	49/60	115
		Wet	phase to phase phase to earth	kV	30/40	85
15	Lightning impulse withstand voltage(peak)		phase to phase phase to earth	kV	75/125	185
			across open contacts	kV	85/145	215

XIKAI®

Key of Power
Electric Professional

Outdoor Vacuum Load Break Switch

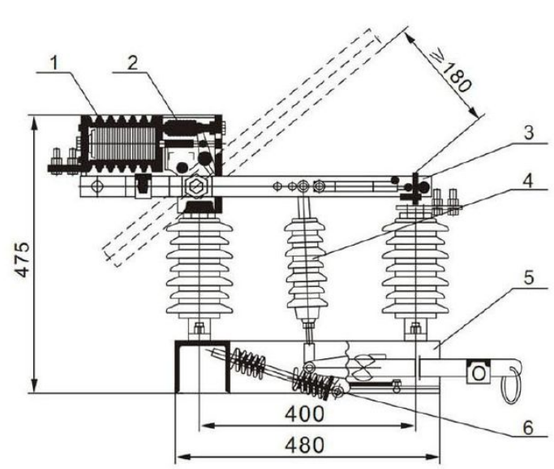
FKW32-12/24/40.5 Series Isolating Vacuum Load Break Switch

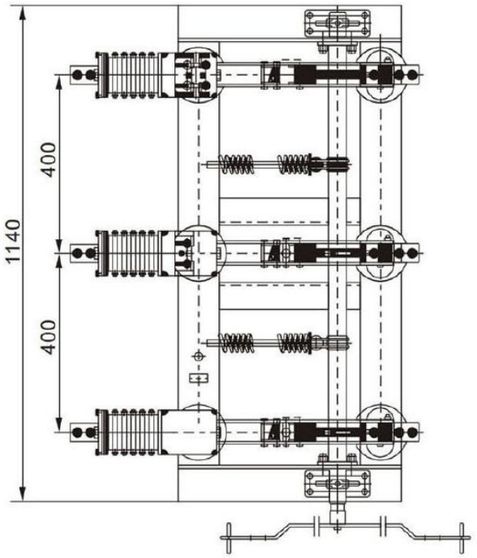
16	Mechanical life	Times	10000	10000
17	Three phase closing asynchronous	ms	≤5	≤5
18	Direction rotating of making contact blade	mm	≤2	≤2
19	Main contact blade pressure	N	300 ± 30	420 ± 42
20	Distance between electric parts and phase to earth	mm	≥200	≥380
21	Rated operating moment	Nm	≤300	≤300

LBS with vacuum arc extinguish chamber

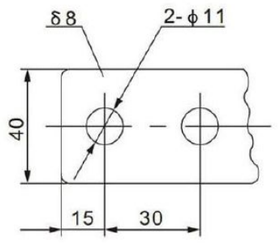
No.	Item	Unit	Data	
1	Contact distance	mm	5 ± 1	18+1
2	Average breaking speed	m/s	1.1 ± 0.2	1.6 ± 0.2
3	Three phase breaking asynchronous	ms	≤5	≤5
4	Three phase making asynchronous	ms	≤5	≤5

Structure feature

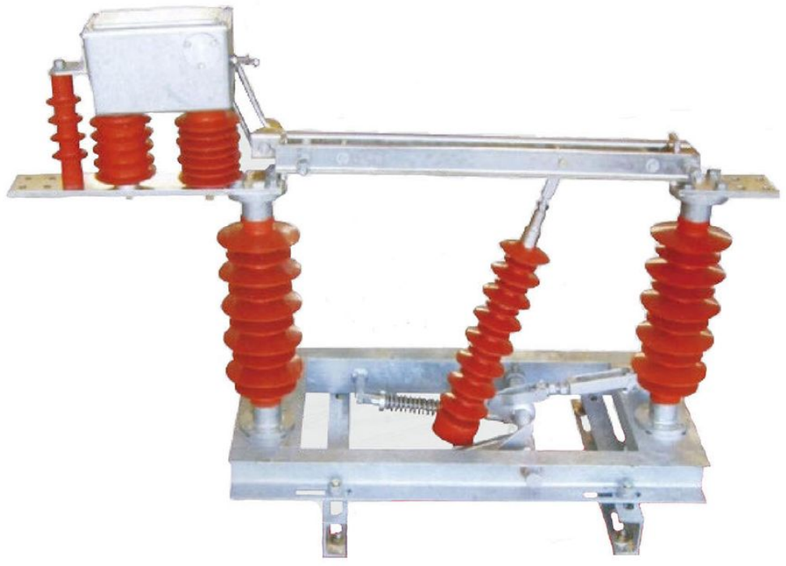




1.Vacuum arc chamber cubicle
2.Opening spring
3.Disconnect blade
4.Insulating bar
5.Frame
6.Spring



FZW32-12 General Arrangement & Dimension Drawing



Product Overview

FZW-27.5/D1250-20 outdoor high-voltage AC vacuum load switch-disconnector combination electrical appliance (hereinafter referred to as the combination electrical appliance), single- phase column structure, novel structure, obvious visible fracture, using operating mechanism to drive vacuum arc extinguishing , It has the characteristics of large breaking capacity, no arc when breaking and closing current, no fire and explosion hazard, quick and frequent operation, long electrical life, maintenance-free and other characteristics.Combination appliances are single-phase AC 50Hz,rated voltage 27.5kV, single-pole outdoor high-voltage switchgear (2000 meters above sea level), widely used in electrified railways, used for breaking load current, no-load transformer, shrinking current, capacitive current and Close short-circuit fault current.

Working Environment

1. The ambient air temperature for outdoor installation is±40℃;
2. Relative humidity: not more than 95%;
3. The altitude does not exceed 2000 meters.

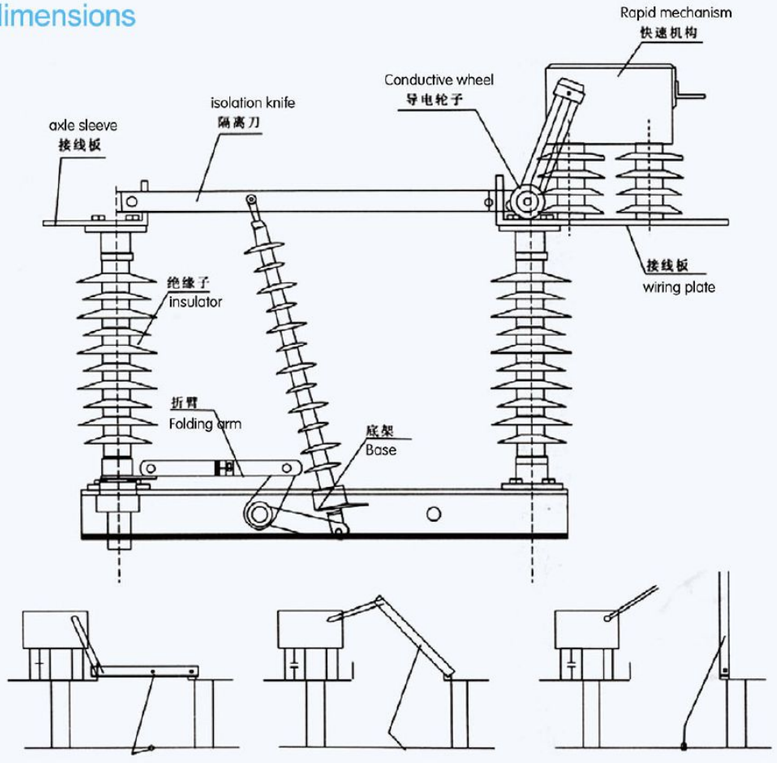
Key of Power
Electric Professional
>

Main Technical Parameters

The load disconnecting switch is installed on an outdoor column. It must be able to break and close the normal load current of the line, and be able to integrate the function of an disconnecting switch to form an obvious visible fracture.The load disconnecting switch can be installed in the locomotive depot, partition pavilion, turn-back section , station yard and other section power supply places, instead of installing the disconnecting switch on the pole, eliminating the special circuit breaker used to cut off the normal load current.

序号 No.	名称 Item	单位 Unit	数据 Data
1	额定电压 Rated voltage	kV	27.5
2	额定电流 Rated current	A	1250
3	额定频率 Rated frequency	Hz	50
4	额定有功负载开断电流 Rated active load breaking current	A	1250
5	一分钟工频耐压 1 min Power frequency withstand voltage	kV	95
6	隔离断口开距 Isolation fracture distance	mm	>400
7	动稳定电流 Dynamic stability current	kA	31.5
8	热稳定电流 Thermal stability current	kA	12.5
9	额定短路关合电流 Rated short circuit switching current	kA	12.5
10	短路电流持续时间 Short circuit current duration	4s	4

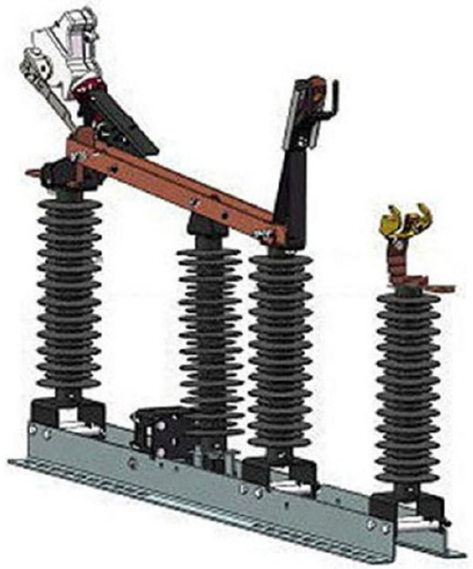
Product dimensions



Outdoor Load Break Switch

Key of Power
Electric Professional
>

FKW19 Series Outdoor High Voltage Load Switch



General

FKW19 type Outdoor on load break switch (switch disconnector) contained in this list are destined to switch stub lines and ring main lines or transformers(It can be equipped with MV HRC fuse links as short circuit protection function) or for switching under on load conditions.
FKW19 type switch comply with IEC/IEEE and DVE recommendation standards. Especially comply with DIN VDE 0670 part 3and IEC publication IEC-60265,IEC-129.

Features And Benefits

- Compact design
- All steel parts either in stainless steel or hot-dip galvanizeo
- Solid and stable base frame
- Main contact with icing protection
- Insulators available in porcelain or altenativelv in silicone
- Minimal sagforthe line-connection thanks to the two fixed terminals
- Completely maintenance antirust ALalloy-Arc chamber
- Switching-offprocedure without extemal arc
- Short circuit making capacity under specific conditions possible
- Easy on-site installation and setting
- High reliability: up to 1000 cyces (depending on the making current)
- Allconducting parts either silver, nickel or tin-plated
- Practically maintenance-free

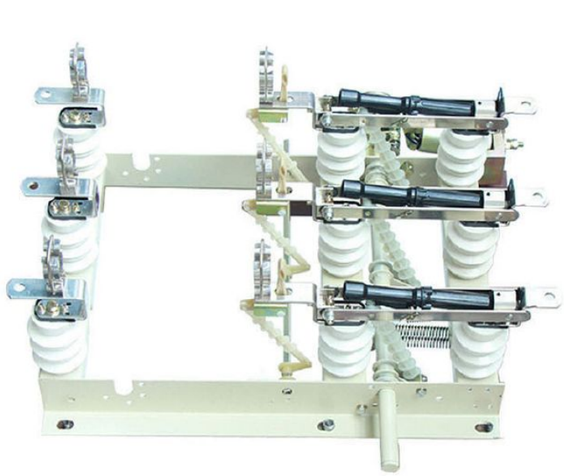
Technical Data

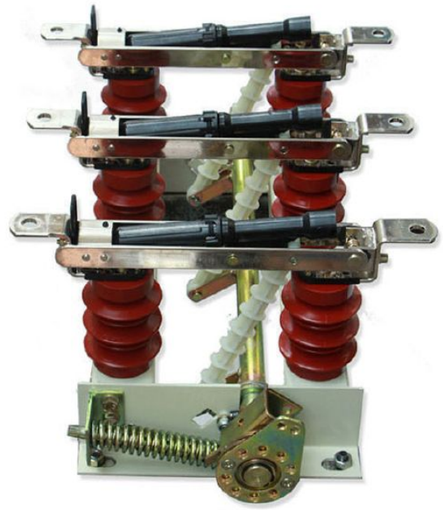
Item		Unit	Data		
Rated voltage		kV	12	24	36
Rated frequency		Hz	50/60		
Ratedcurrent		A	200/400/630		
Rated short circuit withstand current(IS)		kA	20		
Rated peak withstand current(IS)		kA	50		
Rated making current		kA	31.5–50		
Rated insulation leve(HV)	lightning impulse	kA	75/85	125/145	170/195
	Power frequency withstand		45	55/75	75/100

Indoor H.V. Load Switch Witch And Fuse Combination

Key of Power
Electric Professional
>

FN5-12 Series Indoor H.V. Load Switch Witch And Fuse Combination





• Summary

- The FN5-12R(L) Indoor AC H.V. Load switch and fuse combination is designed by ourselves, combined with the requirement of our country and based on the advanced foreign technique. It has been tested for long term by full aspects and confirmed to IEC62271 "AC H.V.load switch-fuse combinations "(2002 version) and GB3804 "3-63KV AC H.V.load switch" standard. Compared to the same products of overseas, It has come up to the technique parameter level. For its small size and light weight, it can be used in RMU and compact substations, also widely used for the power distribution of the 12KV line and has the perfect function of open phase protection.
- The development of the FN5-12 realized the functions of switch, isolation and earthing.

• Application

- The FN5-12R(L) Indoor AC H.V. load switch and fuse combination is also called load switch with release device, adapt to electrical power system with the frequency 50HZ and rated voltage 6-12KV. Used to breaking the on-load current, over-load current and the breaking current. It is equiped with CS6-1 type manual operating system.

• Meaning of type

FN	5	-	12	R	D	(L)	/	□
Indoor load break switch	Designed code		Rated voltage (kV)	With fuse holder	With earth switch	With tripping gear(striker)		Rated current (A)

Indoor H.V. Load Switch Witch And Fuse Combination

Key of Power
Electric Professional

FN5-12 Series Indoor H.V. Load Switch Witch And Fuse Combination

• Serviec Condition

1、The altitude does not exceed 1000m.
2、The ambient air temperature: Max:+40. Min:-10.
3、The relatire humidity of air Daily average=95%. Monthly average=90% (temperature:25)
4、The ambient air should not be obviously polluted by corrosivity and the flammability gas.Etc.
5、The working situation without frequent violent.

• Technical Information

Technical information of Load Switch-Fuse combination (please refer the table)

No.	Description	Unit	Data
1	Rated voltage	kV	12
2	Max.working voltage	kV	12
3	Rated frequency	Hz	50
4	Rated current	A	100
5	Making Capacity	KA	50
6	1 min power frequency withstand voltage (value) to earth and between poles/ across isolating distance	KA	42/48
7	Lighting impulse resistinig voltage (peak) to earth and between poles/ across isolating distance	KV	75/85
8	Fuse link striking output energy	Kg	≈5

Technical information of the load switch (please refer the table)

No.	Description	Unit	Data
1	Rated voltage	kV	12
2	Max.working voltage	kV	12
3	Rated frequency	Hz	50
4	Rated current	A	630
5	Rated breaking capacity for active circuits	A	630
6	5% Rated breaking capacity for active circuits	A	31.5
7	Rated capacity switch-off current	A	10
8	Rated iductacne switch-off current	A	40
9	Rated transfer current	KA	1.3
10	Rated short-time withstand current	KA	20
11	Rated peak withstand current	KA	50
12	Mechanical Endurance	Cycle	2000

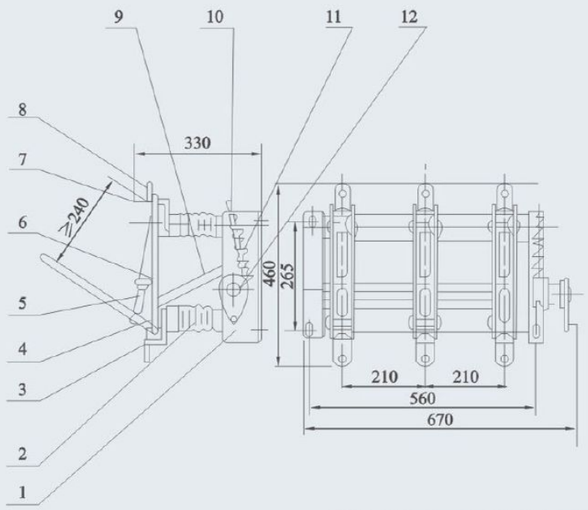
XIKAI®

Key of Power
Electric Professional

Indoor H.V. Load Switch Witch And Fuse Combination

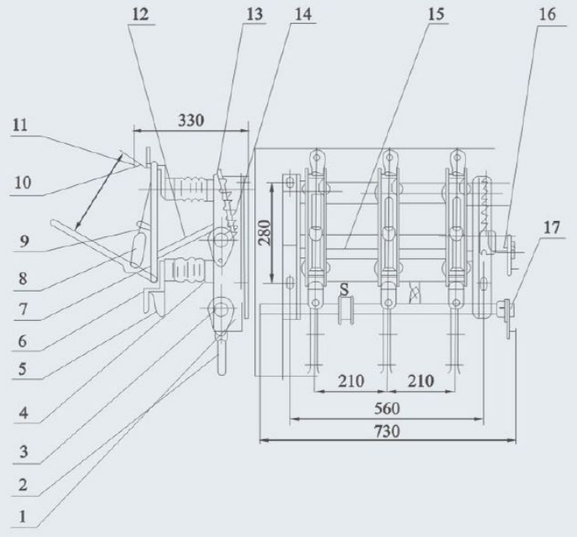
FN5-12 Series Indoor H.V. Load Switch Witch And Fuse Combination

• Appearance diagram



1、Common base frame
2、Post insulator
3、Lower insulator contact
4、Blade
5、Arc extinguisher
6、Torsional spring and its pin
7、Guide bar
8、Upper insulator contact
9、Cylindrical insulating element
10、Load break switch spiale
11、Spring energy-storing mechanism
12、Operating mechanism

FN5-12 Indoor AC H.V. Load Break Switch



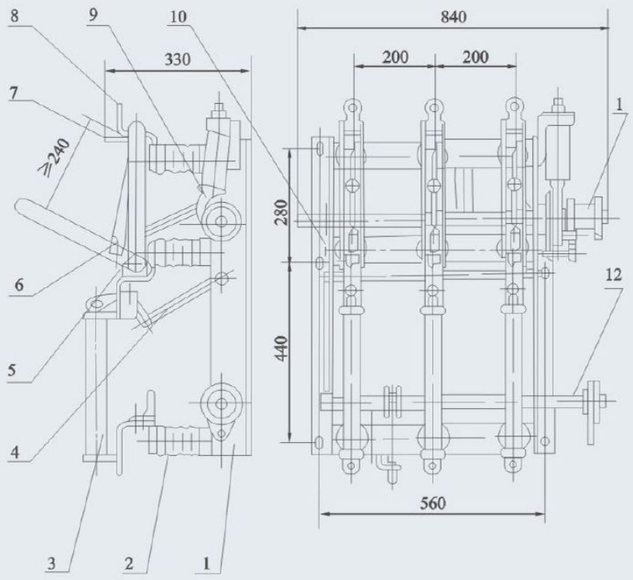
1、Common base frame
2、Earth blade
3、Earth switch spiale
4、Post insulator
5、Earth spiale
6、Lower insulator contact
7、Blade
8、Arc extinguisher
9、Torsional spring and its pin
10、Guide bar
11、Upper insulator contact
12、Cylindrical insulating element
13、Load break switch spiale
14、Earth switch spring energy-storing mechanism
15、Earth switch spring energy-storing mechanism
16、Load swtich operating mechanism
17、Earth switch operating mechanism

FN5-12D Indoor AC H.V. Load Break Switch

Indoor H.V. Load Switch Witch And Fuse Combination

Key of Power
Electric Professional
>

FN5-12 Series Indoor H.V. Load Switch Witch And Fuse Combination

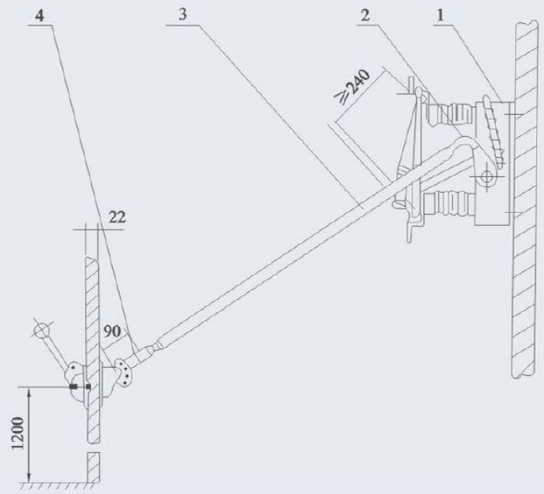


1、Common base frame
2、Insulator
3、Fuse link
4、Tripper gear
5、Moving contact
6、Arc extinguisher
7、Guide bar
8、Fixed contact
9、Operating mechanism
10、Interlock gear
11、Load switch operating mechanism
12、Earth switch

FN5-12RD(L) Indoor AC H.V. Load Break Switch

- **Installation diagram**

Installation diagram for contacting load swith with CS6-Ⅰ operating mechanism



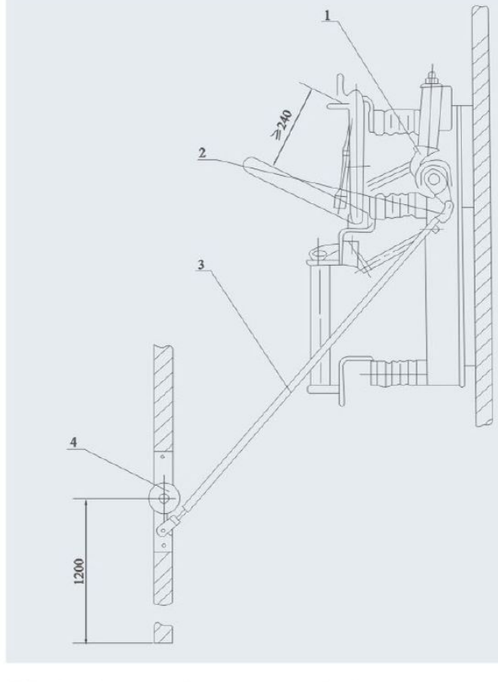
1、Load break switch
2、Crankarm
3、3/4 welded steel pipe
(customer owned tool)
4、Operating mechanism

Key of Power
Electric Professional
>

Indoor H.V. Load Switch Witch And Fuse Combination

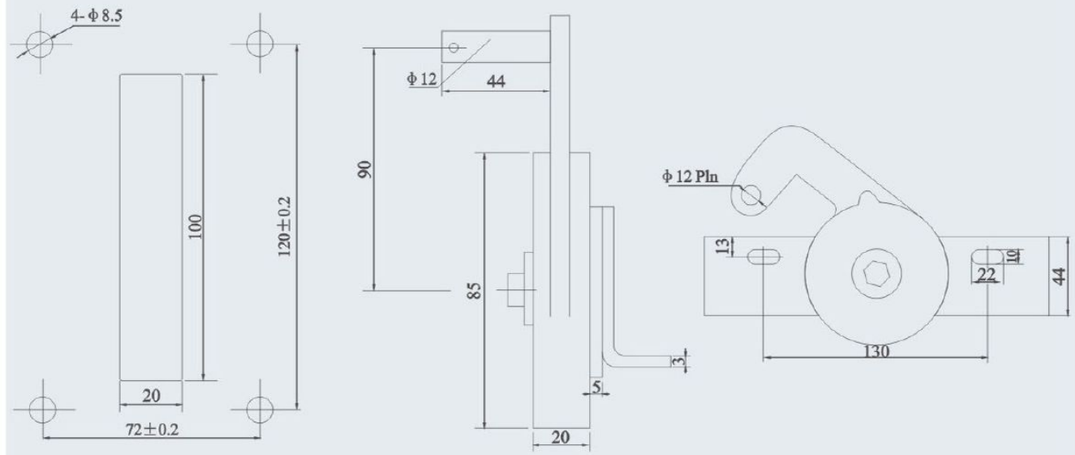
FN5-12 Series Indoor H.V. Load Switch Witch And Fuse Combination

Installation diagram for contacting load break switch with CS□ operating mechanism



1、Load switch
2、Crankarm
3、3/4" welded steel pipe (customer owned tool)
4、Operating Mechanism

The size diagram of operating mechanism



The panel size of Cs6 operating mechanism

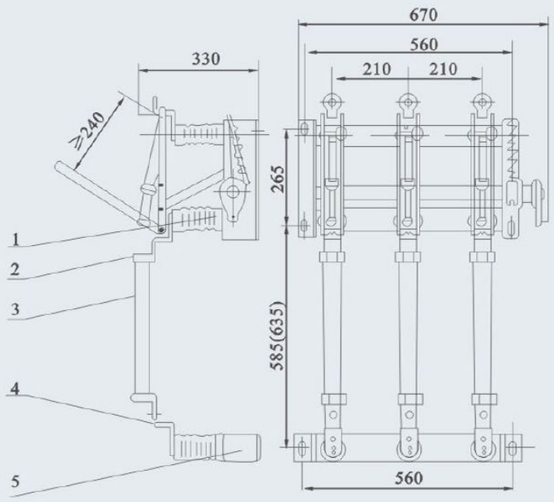
The panel size of Cs□ operating mechanism (sideview)

The size of Cs□ operating mechanism (Frontview)

Indoor H.V. Load Switch Witch And Fuse Combination

Key of Power
Electric Professional

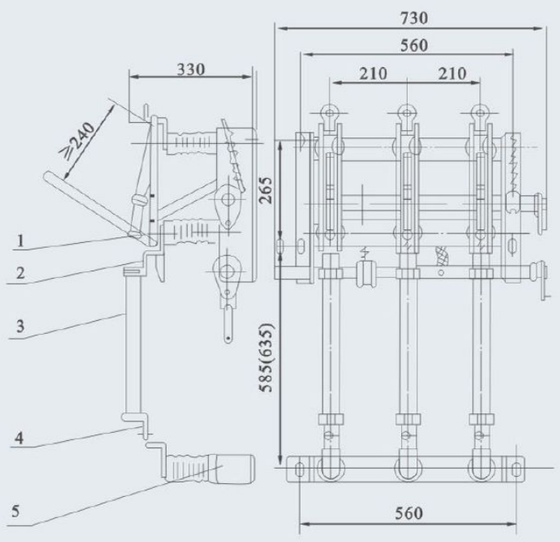
FN5-12 Series Indoor H.V. Load Switch Witch And Fuse Combination



1、FN15-12R Load break switch
2、Fuse base upper contact
3、Fuse link
4、Fuse base lower contact
5、Fuse support insulator

Notes: The installing size in the bracket is for RN13 fuse link with 75A or above 75A.

FN5-12R Indoor AC H.V. Load Break Switch



1、FN15-12DR Load switch
2、Fuse base upper contact
3、Fuse link
4、Fuse base lower contact
5、Fuse support insulator

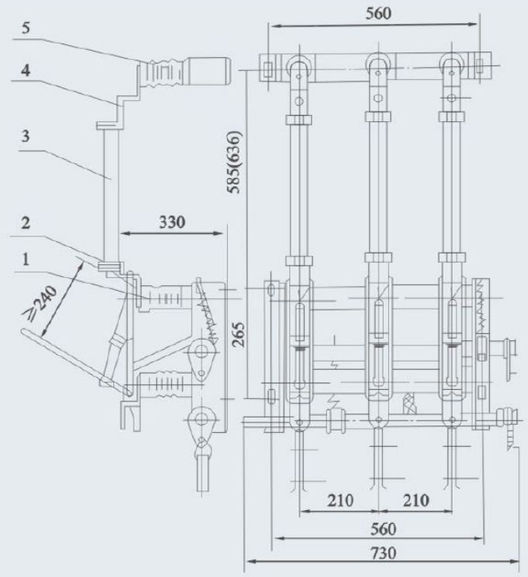
Notes: The installing size in the bracket is for RN13 fuse link with 75A or above 75A.

FN5-12DR Indoor AC H.V. Load Break Switch

Key of Power
Electric Professional

Indoor H.V. Load Switch Witch And Fuse Combination

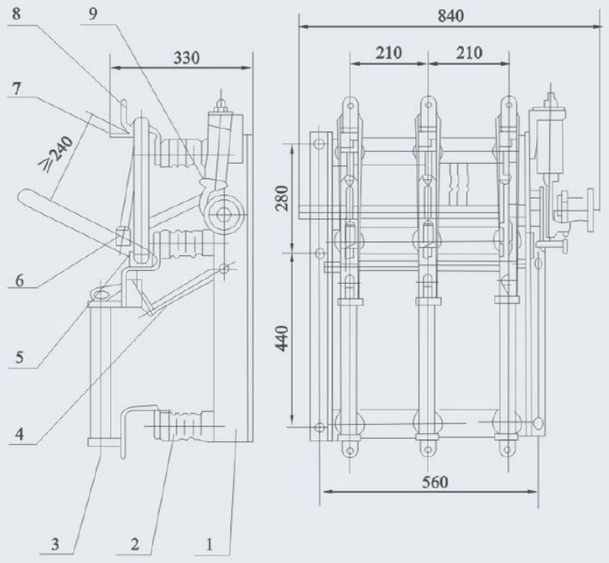
FN5-12 Series Indoor H.V. Load Switch Witch And Fuse Combination



1、FN15-12R/S Load break switch
2、Fuse base contact
3、Fuse link
4、Fuse base contact
5、Fuse support insulator

Notes:The installing size in the bracket is for RN13 fuse link with 75A or above 75A.

FN5-12R/S Indoor AC H.V. Load Break Switch



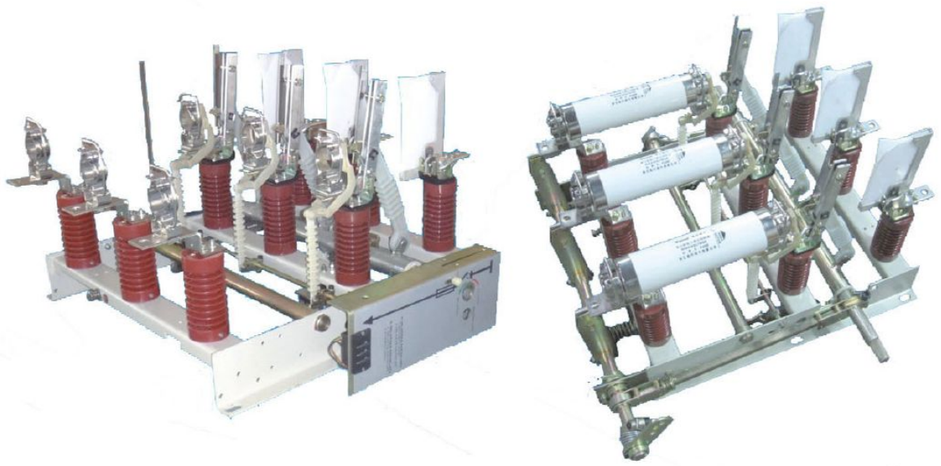
1、Common base frame
2、Insulator
3、Fuse link
4、Tripper gear
5、Moving contact
6、Arc extinguisher
7、Guide bar
8、Fixed contact
9、Operating mechanism

FN5-12R(L) Indoor AC H.V. Load Break Switch

Indoor H.V. Load Switch Witch And Fuse Combination

Key of Power
Electric Professional

FN7-12 Series Indoor H.V. Load Switch - Fuse Combination



• Summary

- FN7-12DR is used for three-phase AC 50Hz 12KV power systems.
- They used for breaking load current and controlling short-circuit current.
- FN7(C)-12 type H.V load switch-fuse combination is basied on the FN7-12 series H.V load switch, then put the operating mechanism on the side , as customer order.

• Meaning of type

FN	7	-	12	/	D	□	□	R	□	□	/	□□□
Indoor load break switch	Design code		Rated voltage (kV)		Earth switch	Earth switch position (wire-in end:S, wire-out end:X)	Interlock gear between load switch and earth switch (with:L, without:blank)	Fuse	The striker of the fuse (with:F without:blank)	Shunt Trip Coil (with: F without:blank)		Rated current (400A, 630A)

• Normal Serviec Condition

1、The altirude does not exceed 1000m.
2、The ambient air temperatrue: Max:+40. Min:-25.
3、The relatire humidity of air Daily average =95%. Monthly average =90%.
4、The ambient air should not be obviously polluted by corrosivity or the flammability gas steam.Etc.
5、The working situation without frequent violent.

XIKAI®

Key of Power
Electric Professional

Indoor H.V. Load Switch Witch And Fuse Combination

FN7-12 Series Indoor H.V. Load Switch - Fuse Combination

• Product Type

Classification	Type	DS Earth switch at the wire-in end	DX Earth switch at the wire-out end	L Interlock device	R Fuse	RA Fuse with Stripper	F Shunt Trip Coil
Without striking tripper	FN7-12	-	-	-	-	-	-
	FN7-12DSL	△	-	△	-	-	-
	FN7-12DXL	-	△	△	-	-	-
	FN7-12R	-	-	-	△	-	-
	FN7-12DSLR	△	-	△	△	-	-
	FN7-12DXLR	-	△	△	△	-	-
With striking tripper	FN7-12RAF	-	-	-	-	△	△
	FN7-12DSLRAF	△	-	△	-	△	△
	FN7-12DXLRAF	-	△	△	-	△	△

• Technical Information

Rated voltage (kV)	Max. Voltage (kV)	Rated current (A)	1 min power frequency withstand voltage (kV)	4S Short time withstand current (value) (kA)	Peak withstand current (peak) (kA)	Short-circuit controlling current (kA)	Breaking Capacity (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

• Rated parameter of fuse

Type	Rated Voltage (kV)	Rated Current (A)	Rated Current of Fuse (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

Indoor H.V. Load Switch Witch And Fuse Combination

FN7-12 Series Indoor H.V. Load Switch - Fuse Combination

- **Overall and Installation**

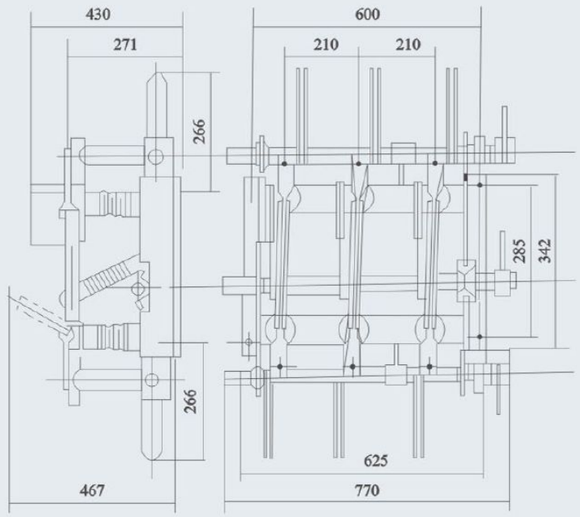


Fig1.Load switch without tripper "Line Protection"

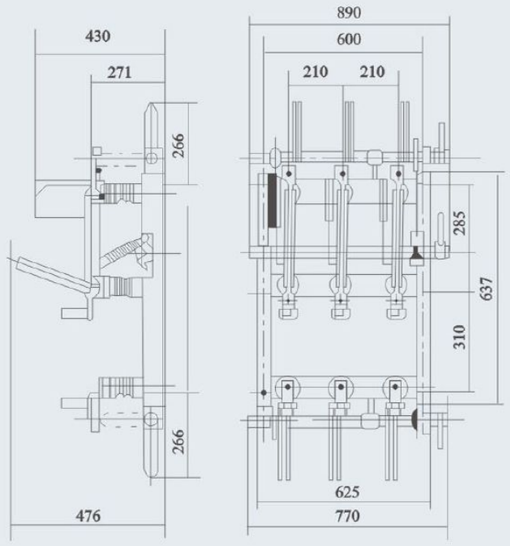


Fig2.Load switch with tripper "transformer protection"

Key of Power
Electric Professional
>

Indoor H.V. Load Switch Witch And Fuse Combination

FN7-12 Series Indoor H.V. Load Switch - Fuse Combination

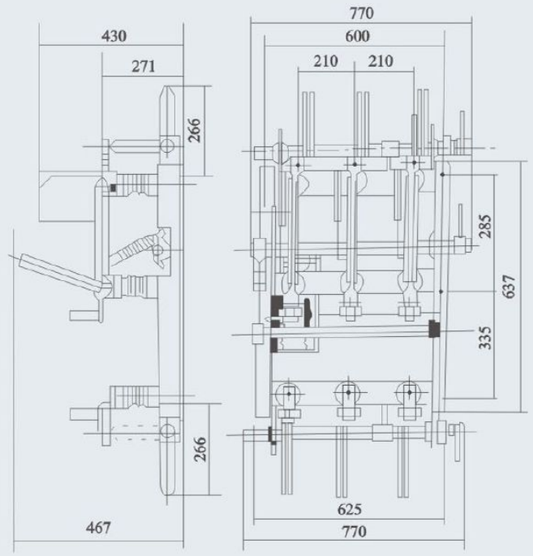


Fig3.Load switch with tripper

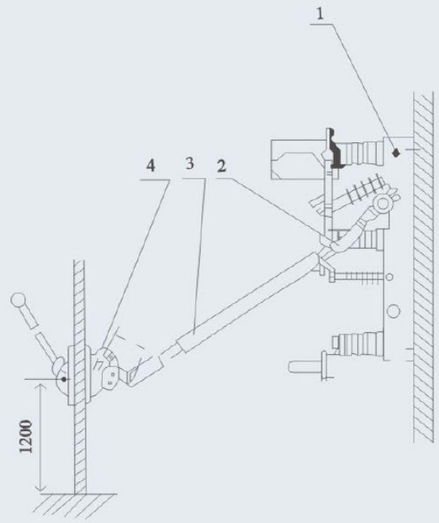
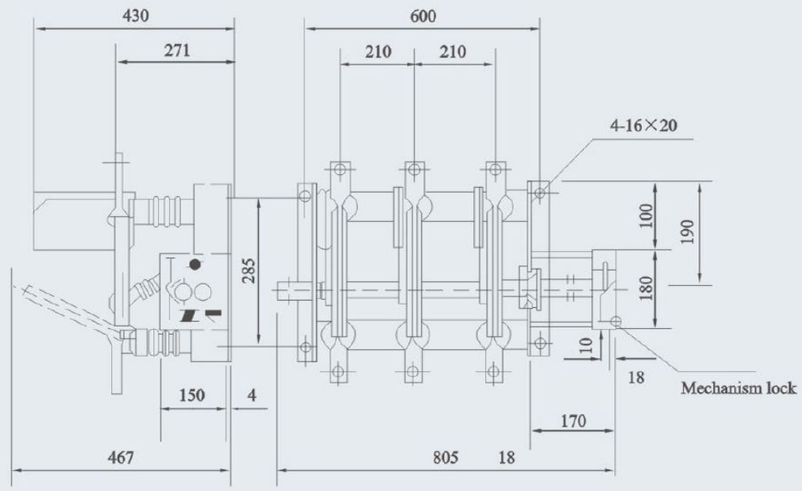


Fig4.Installation diagram of CS6 operating mechanism

Indoor H.V. Load Switch Witch And Fuse Combination

Key of Power
Electric Professional
>

FN7-12 Series Indoor H.V. Load Switch - Fuse Combination



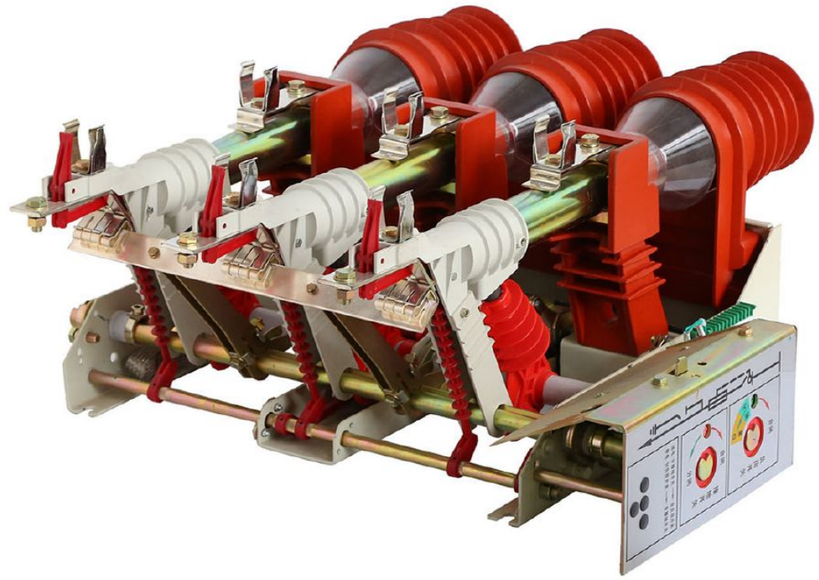
FN7(C)-12 H.V. Load Switch

FN7(C)-12 H.V. Load Switch-Fuse Combination

Key of Power
Electric Professional
>

Indoor H.V. Load Switch Witch And Fuse Combination

FN12-12 Series Indoor H.V. Load Switch



• Summary

- FN12 is a three-phase H.V switch equipment, which is used for 12KV, 50Hz for breaking and switching load current, no-load transformer cable charging current and closing short-circuit current. The load switch with earth switch can switch short-circuit current.
- FN12-12DR Load switch and S□LAJ-12(XRNT□-10) H.V current limiting Fuse. This switch can break any current till short-circuit current. Because of the striker of the fuse, the switch can switch off automatically.

• Type and meaning

F	N	-	12	/	12	D	/	630	-	50	-	□
AC H.V load switch	Indoor		Design code		Rated voltage (kV)	Earth switch		Rated current (A)		Rated peak withstand current(kA)		Mechanism mode: S-by hand. D-by motor.

F	N	-	12	/	12	(R)	D	/	100	-	31.5	-	□
H.V load break switch	Indoor		Design code		Rated voltage (kV)	Witch Fuse Base	Earth switch		Rated current (A)		Rated peak withstand current(kA)		Mechanism pattern: S handle operate. D by motor.

Indoor H.V. Load Switch Witch And Fuse Combination

Key of Power
Electric Professional
>

FN12-12 Series Indoor H.V. Load Switch

• Application

- It is used for the ring main units and industrial equipment of 12KV and three-phase AC 50Hz to control load and short - circuit current. Because the switch-fuse conmbination protects transformer equipment more reliably than circuit breaker. It is especially suitable for ring main units, radial distribution and combined transformers.

• Standard

a、GB3804-90《3~65KV AC H.V Load switch》
b、GB16926-1997《High-voltage alternating current switch-fuse combinations》(eqv. IEC62271-2002)
c、GB1995-89《AC H.V isolate switch and earth switch》

• Normal Serviec Condition

A、The ambient air temperatrue: Max:+40℃. Min:-25℃.
B、The altitude=1000m.
C、The relatire humidity of air Daily average=95%. Monthly average=90%.
D、The ambient air should not be obviously polluted by corrosivity or the flammability gas and geam. Etc.
E、Without frequent shake.
F、Enviroment degree: grade Ⅱ.
If requirements are not mentioed above, users can fix them with the manufacturer.

• Techniacl parameter and performances(please see the table)

No.	Description	Unit	FN12-12D/630	FN12-12D(R)D/100
1	Rated voltage	KV	12	
2	Rated frequency	Hz	50	
3	Rated current	A	630	100
4	Lighting impulse withstand voltage	KV	To earth and between poles 75/ across isolating distance 85	
5	1min power frequency withstand voltage	KV	To earth and between poles 42/ across isolating distance 48	
6	Rated short time withstand current	KA	20(4S)	
7	Rated Peak Withstand Current	KA	50	
8	Rated making capacity(prospective value)	KA		31.5
9	Max.critical breaking current I^2t	KA		fuse characteristic curve
10	Min. Breaking current	A^2S		fuse characteristic curve

XIKAI®

Key of Power
Electric Professional
>

Indoor H.V. Load Switch Witch And Fuse Combination

FN12-12 Series Indoor H.V. Load Switch

No.	Description	Unit	FN12-12D/630	FN12-12D(R)D/100
11	Min.Breaking current	KA		fuse characteristic curve
12	Rated transfer current	KA		1.5
13	Max. Breaking current(reference value)	KA	1.8	
14	Breaking capacity for no-load transformer	kva	1250	
15	Rated cable charging current	A	10	
16	Breaking times for actire circaits	time	⩾100	
17	Switch-off time of rated power load current switch on-and-off	S		>0.06
18	Earth suitch short time withstand current	KA	20(2S)	20(2S)
19	Earth suitch short time withstand current(peak)	KA	50	50
20	Motor operating power voltage	V	110、220 DC/AC	

• Mechanical characteristic paramete

No.	Description	Unit	FN12-12D/630	FN12-12D(R)D/100
1	Moving contact position	mm	200^{+8}_{-2}	
2	Between Phases distance (before mechanism store energy)	mm	210±3	
3	Moving contac ultra travel	mm	40±2	
4	Auxiliary contact distance	mm	40±2	
5	Three-phase switch on-and-off synchronicity	m/s	<3	
6	Switch-off speed	m/s	>2.8	>2.8
7	Switch-on speed	m/s	>3.8	
8	Distance between metal value and conducting pipe	mm	>125	
9	Across isolating distance of earth switch	mm	>150	
10	Main. Loop resistance	μ Ω	>120	>300
11	Max. Operating moment	Nm	<160	

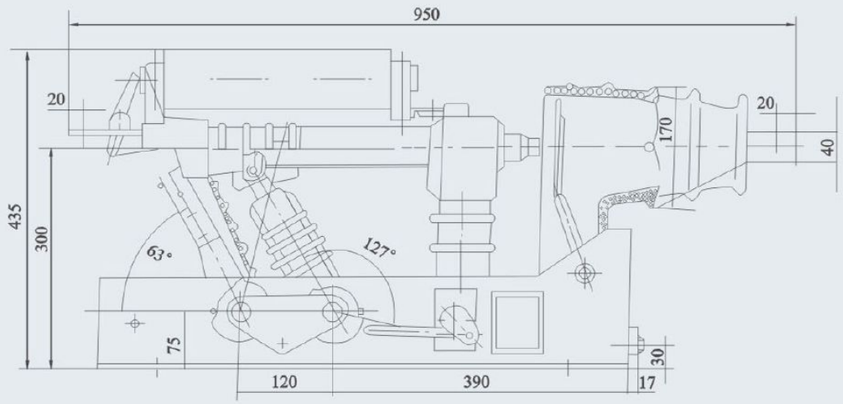
Note:
1. When measuring auxiliary contact distance. Ade 24mm fixed contact to the conducting pipe.
2. When measuring FN12-12(R)D main loop resistance, the fuse can be replaced by the conducting bar ignoring its resistance.

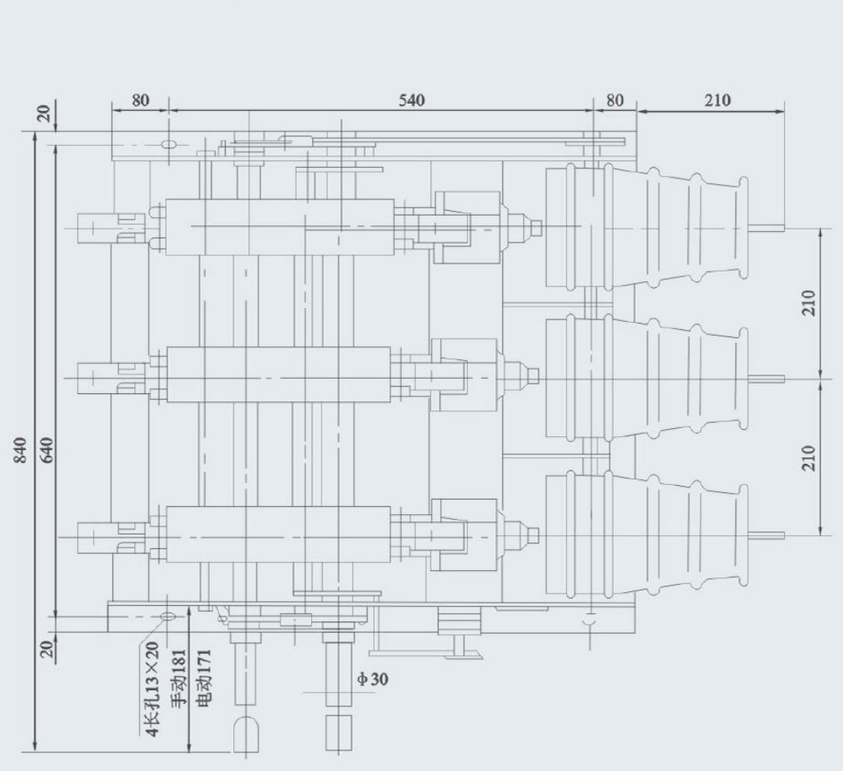
Indoor H.V. Load Switch Witch And Fuse Combination

Key of Power
Electric Professional
>

FN12-12 Series Indoor H.V. Load Switch

- **Switch Structure, overall and installation diagram**





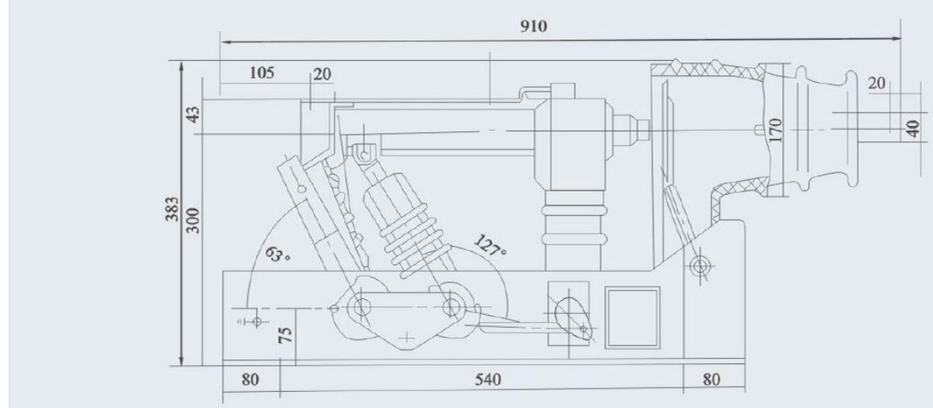
FN12-12(R)D/100-31.5 indoor AC H.V Load switch

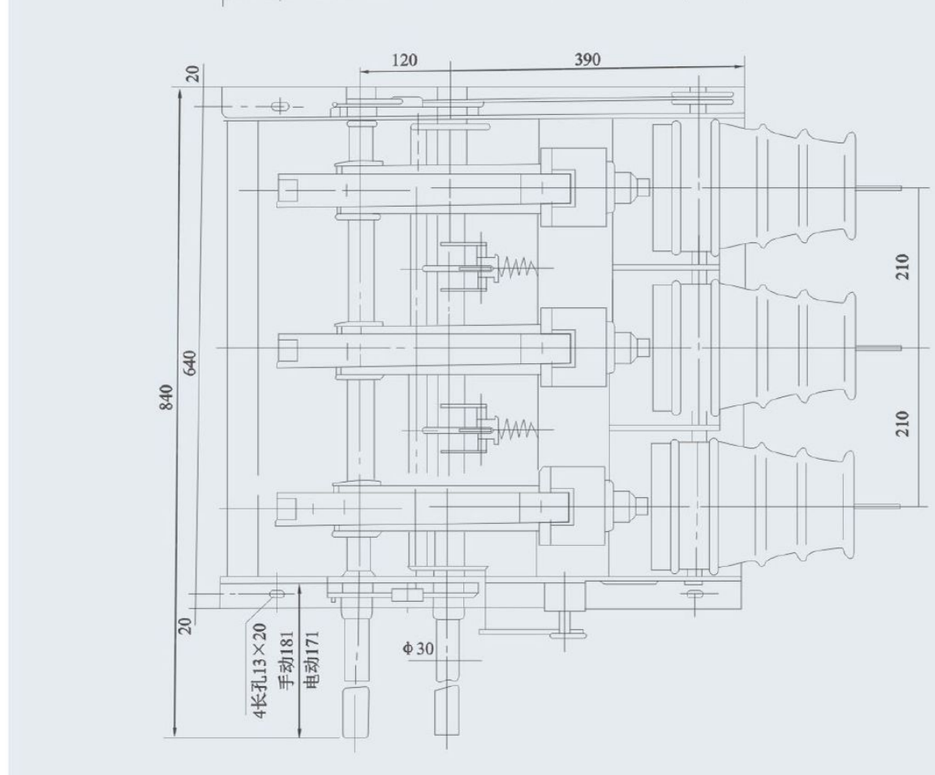
XIKAI®

Key of Power
Electric Professional
>

Indoor H.V. Load Switch Witch And Fuse Combination

FN12-12 Series Indoor H.V. Load Switch



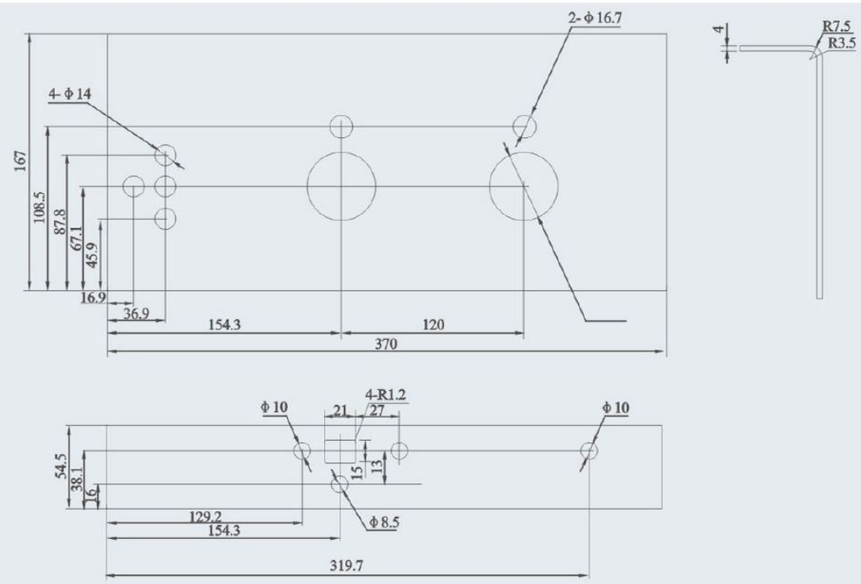


FN12-12D/630-50 AC H.V Load switch-fuse combination

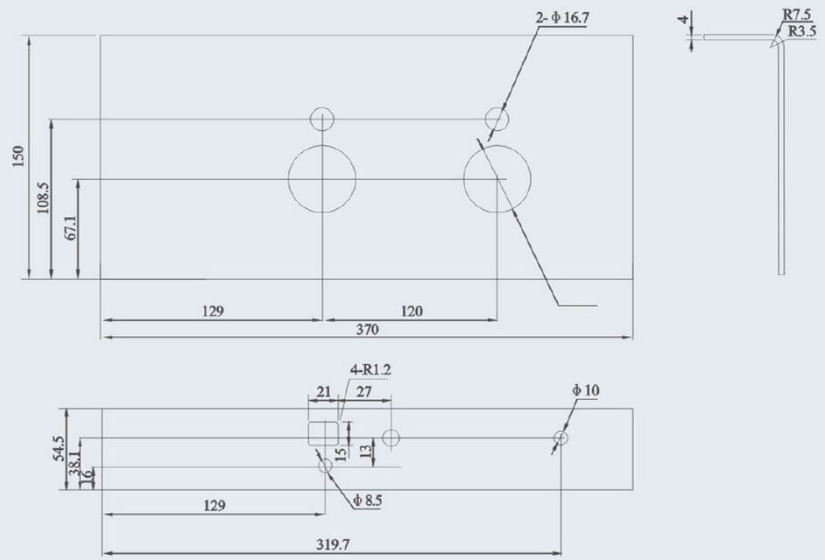
Indoor H.V. Load Switch Witch And Fuse Combination

FN12-12 Series Indoor H.V. Load Switch

Key of Power
Electric Professional
>



The size diagram of electric motor operating mechanism



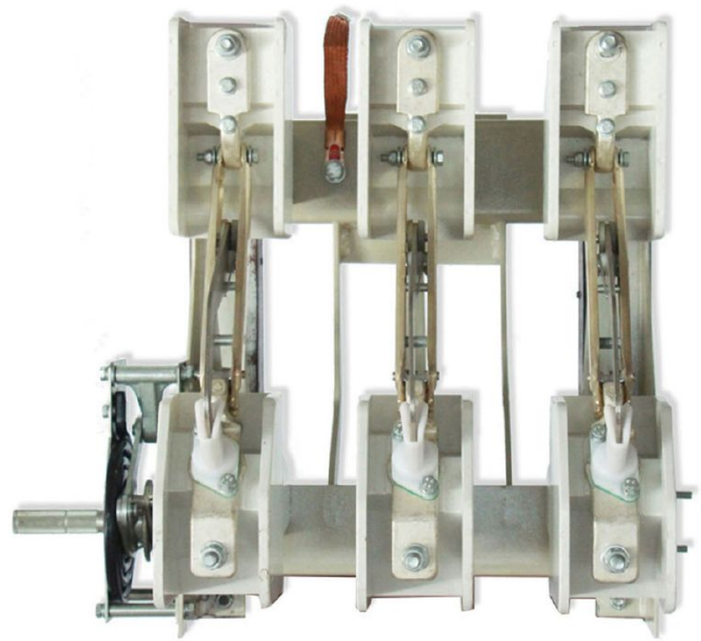
The size diagram of manual operating mechanism

Key of Power
Electric Professional
>

Indoor H.V. Load Switch Witch And Fuse Combination

FN18-□ High Voltage Indoor Load Break Switch

FN18-□ DR High Voltage Indoor Load Break Switch-Fuse Combination



• General

- FN18-□ is a general purpose, three-pole, load break switch that offers switchgear owners and assemblers the advantages of an advanced interrupting technology and proven, dependable performance in a compact design. The switch is available to switchgear assemblers as a building block for metal-enclosed and pad-mounted switchgear application in ratings from 12-40.5kV.
- The standard Fn18 switch includes a heavy-duty steel frame with stand-off insulators, a unique puffer-type arc extinguishing system, an operating mechanism and current-carrying components, including blade-type interrupters with cast hinges and jaw connectors.
- Optional accessories and features include a variety of operating handles, a motor operator, auxiliary switches, a shunt trip device, fuse bases, mechanical fuse tripping, grounding switches, mechanical door interlocking and key interlocking.

Indoor H.V. Load Switch Witch And Fuse Combination

FN18-□ High Voltage Indoor Load Break Switch

FN18-□ DR High Voltage Indoor Load Break Switch-Fuse Combination

Key of Power
Electric Professional
>

• Technical Specification

Technical specification switch disconnector type FN18-□/FN18-□DR

				12kV			17.5kV			24kV			36kV			40.5kV		
Rated voltage	Un	kV																
Rated current	In	A		400	630	1250	400	630	1250	400	630	1250	630	800	1000	630	800	1000
Max.rated current	I	A		400	630	1150	400	630	1250	400	630	1250	630	800	800	630	800	800
Short circuit making capacity	Ima	kA peak		67	67	67	50	50	50	50	50	50	50	50	50	50	50	50
Peak withstand current*	Idyn	kA peak		82	82	82	82	82	82	82	82	82	86	66	66	66	66	66
Short time current	1 sec.	Ith	kA eff	31.5	31.5	31.5	31.5	31.5	31.5	25	25	31.5	25	25	25	25	25	25
	2 sec.	"	"	25	25	25	25	25	25	25	25	25						
	3 sec.	"	"	20	20	20				16	16	16						
Mainly active load breaking capacity[2] (test duty 1 and, IEC 60265-1(265))	I	A		400	630	1250	400	630	1250	400	630	1250	630	800	630	800	630	800
Mainly capacitive breaking capacity (test duty 4, IEC 60265-1(IEC 265))	I	A		150	150	150	45	45	45	80	80	80	50	50	50	50	50	50
Mainly inductive breaking capacity cos ψ=0.15		A		16	16	16	16	16	16	16	16	16	16**	16**	16**	16**	16**	16**
Max. Breaking capacity in co-operation with fuses IEC 62271-104(IEC 420 1990-11)		A		1600	1600		1600	1600		900	900		300*	300*	300*	300*	300*	300*
Power frequency withstand voltage 50Hz 1min. -to earth and between poles -across isolating distance		kV kV		42 45			45 60			55 70			80 88			95 120		
Impulse withstand voltage 1.2/50 μ s -to earth and between poles -across isolating distance		kV kV		75 85			95 110			125 145			170 195			190 220		
Pole distance	P	mm		150,170 and 210			170 and 210			170***,235 and 275			360					
Max.operating torque at: -closing K/A mech. -Opening K/A mech.		Nm Nm		115-120Nm K-mech. 120 Nm/A-mech.3Nm									80-100Nm K-mech. 80-100 Nm					
Operating angle on the shaft		degrees		130									120					
Opening time		ms		40-60									60					

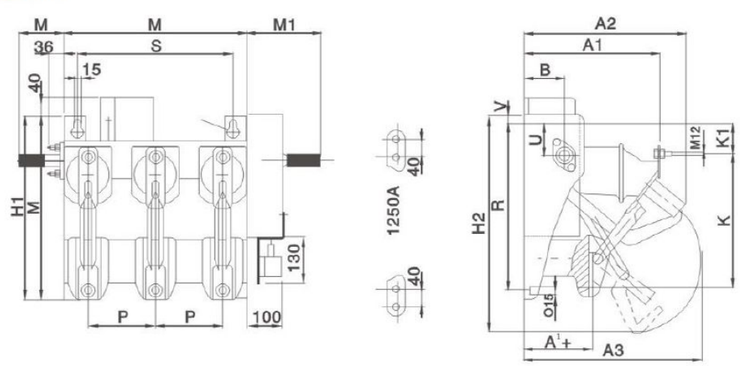
* - IEC420-1973

** - power factor=0,1

***- with insulating barriers

• Dimensonal drawings switch disconnector with mechanism

FN18-12,17.5 and 24kV



Indoor H.V. Load Switch Witch And Fuse Combination

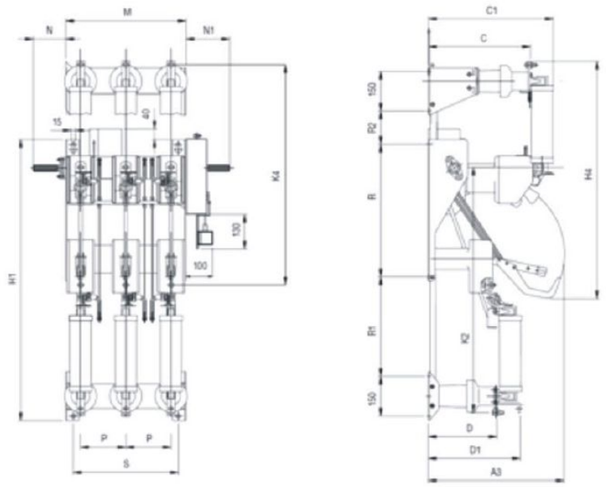
FN18-□ High Voltage Indoor Load Break Switch

FN18-□ DR High Voltage Indoor Load Break Switch-Fuse Combination

Key of Power
Electric Professional
>

Type	A	A1	A2	A3	B	H	H1	H2	K	K1	M	N	N1	P	R	S	U	V
FN18-12-A/K/KS,P=150	166	320	362	394	90	422	428	510	310	63	415	122	164	150	375	350	75	33
FN18-12-A/K/KS,P=170	166	320	362	394	90	422	428	510	310	63	452	122	164	170	375	390	75	33
FN18-17.5-A/K/KS,P=170	225	375	418	511	98	534	577	600	441	87	452	122	164	170	500	395	90	18
FN18-24-A/K/KS,P=170	225	375	418	511	98	534	57	600	411	87	452	186	202	170	500	395	90	18
FN18-12-A/K/KS,P=210	166	320	362	394	90	422	428	510	310	63	532	122	164	210	375	470	75	33
FN18-17.5-A/K/KS,P=210	225	375	418	511	98	534	577	600	441	87	532	122	164	210	500	470	90	18
FN18-24-A/K/KS,P=235	225	375	418	511	98	534	577	600	441	87	582	186	202	235	500	525	90	18
FN18-24-A/K/KS,P=275	225	375	418	511	98	534	577	600	411	87	582	186	202	275	500	605	90	18

FN18-□DR12,17.5 and 24kV

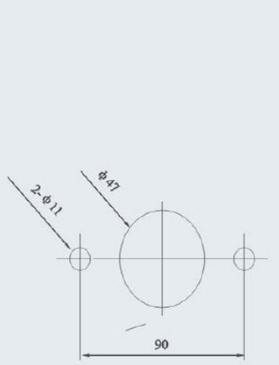


Type	Fuses		C	C1	D	D1	H1	H4	K2	K4	R1	R2
	KV	Length										
FN18-□DR12kV	3.6/7.2	192	328	430	258	346	848	710	722	598	275	50
		292					948	810	822	698	375	150
	12	292										
		442					1098	960	972	848	525	300
FN18-□DR17,5kV	17.5	292	383	485	258	346	1060	895	925	828	375	125
		442					1210	1045	1075	978	525	275
FN18-□DR24kV	24	442			258	346	1194	1045	986	978	425	275
		537					1284	1140	1090	1073	525	370

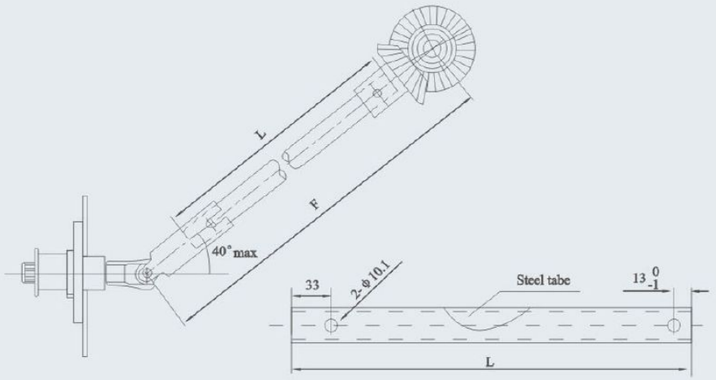
Indoor H.V. Load Switch Witch And Fuse Combination

FN18-□ High Voltage Indoor Load Break Switch
FN18-□ DR High Voltage Indoor Load Break Switch-Fuse Combination

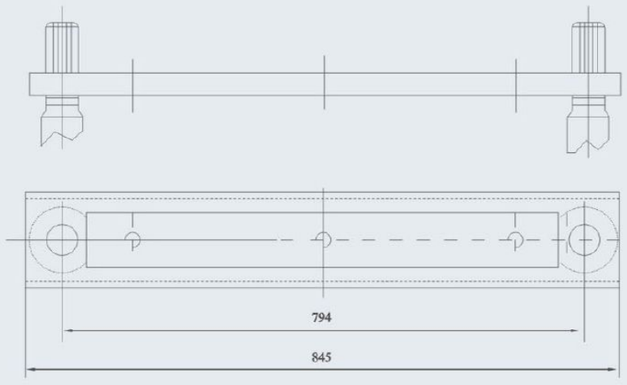
Key of Power
Electric Professional
>



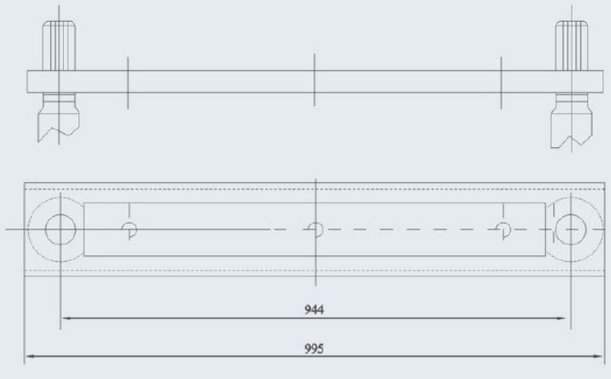
Operation plate dimension (picture 3)



Operation link dimension (picture4)



12kV Interlock plate dimension (picture5)

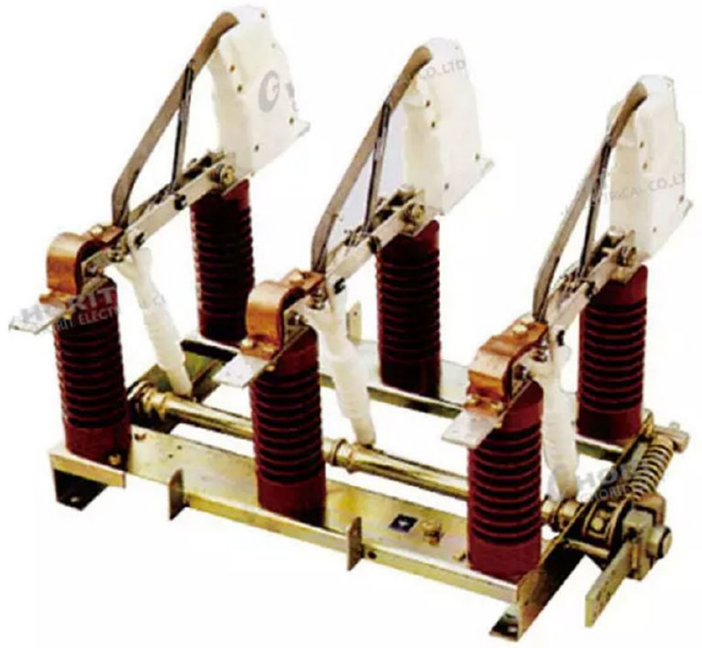


24kV Interlock plate dimension (picture6)

Indoor H.V. Load Switch Witch And Fuse Combination

FN□-24 Indoor High Voltage Load Break Switch
FN□-24DR Indoor High Voltage Load Break Switch-Fuse Combinations

Key of Power
Electric Professional
>



• General

- FN□-24 Indoor Load Break Switch with epoxy supports , double switch blades and contacts with arc quenching chambers and lagging pins, loopless current paths, structural steel base frame, with quick making and stored energy tripping device for three-pole disconnection by the fuse-striker-pin.
- XIYA Load Break Switches have proved to be excellent for years. They have many advantages which have made this type of switch superior to others.
- The dry type arc quenching chambers join two switch principle for safe disconnection of heavy and small currents. The present kind of consruction is characterized by a clear and easily surveyable unitized system. The arcing contacts are guided through a chute to achieve total safety. Due to plastic insulation, the load break switch has a lighter weight and greater electrical and mechanical safety.
- FN□-24DR switch can be used with ring main units, as transformer switches(with high-tension XRNT fuses as short circuit protection) or instead of bus isolators in distribution stations.
- The FN□-24 load break switches fulfill IEC60265 specification.

Indoor H.V. Load Switch Witch And Fuse Combination

FN□-24 Indoor High Voltage Load Break Switch

FN□-24DR Indoor High Voltage Load Break Switch-Fuse Combinations

• Technical Parameter

Description	Unit	Data
Rated voltage	KV	24
Max.working voltage	KV	24
Rated frequency	Hz	50
Rated current	A	630
Rated short time current 1 secretary(Ith) 3.secretary(Ith)	kA rms	 20 10
Rated peak current (Idvn)	kA peak	50
Rated short circuit making capacity ima	kA peak	50
Rated mainly load breaking current capacity cosΦ=0.7	A rms	630
Max.Mainly active load breaking capacity cosΦ=0.7	A rms	630
Rated closed breaking capacity cosΦ=0.3	A rms	630
Rated single breaking capacity	A rms	630
Rated cable charging capacity	A rms	50
Power frequency withstand voltage 50Hz 1 min	kA rms kA rms	55 65
To earth Interphase/insulating voltage peak	kV peak kV peak	145 125
Mechanical life		2500 operation
Mac.operating torque when Closing Opening	N.M. N.M.	64 64
Operating angle on the shaft	Degree	80
Operating time	Ms	35
Arc-extingaish time	Ms	20
Earthing switch attachment Rated short-time current Peak withstand current Short circuit making capacity Power frequency withstand voltage (Lighting) impulse resisting voltage Pole distance	kA rms kA peak kA peak kV kV Mm	25kA rms 50kA peak 50kA peak 55 125 275

XIKAI®

Indoor H.V. Load Switch Witch And Fuse Combination

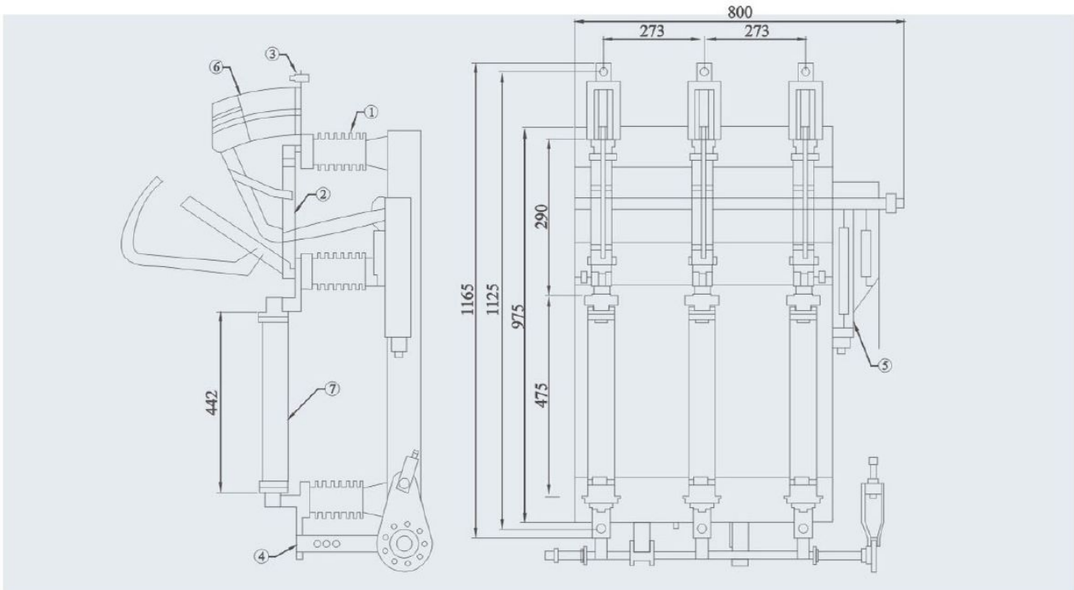
FN□-24 Indoor High Voltage Load Break Switch

FN□-24DR Indoor High Voltage Load Break Switch-Fuse Combinations

Key of Power
Electric Professional
>

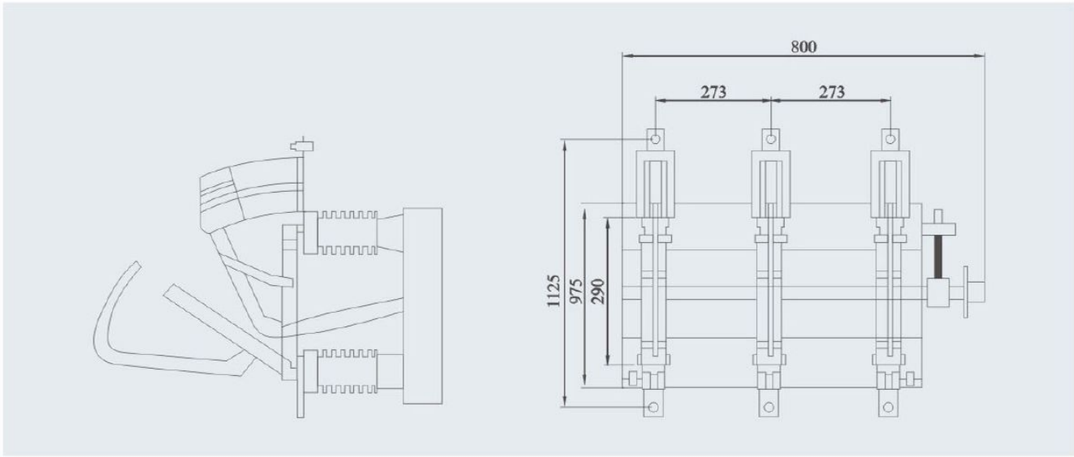
• Overall and Installation Diagram

FN[]-24DR Load Break Switch-Fuse Combinations



1	2	3	4	5	6	7
EPOXY INSULATOR	CONTACT BLADE	TOP TERMINAL	LOWER TERMINAL	OPERATION MECHANISM	ARCING CHAMBER	FUSE

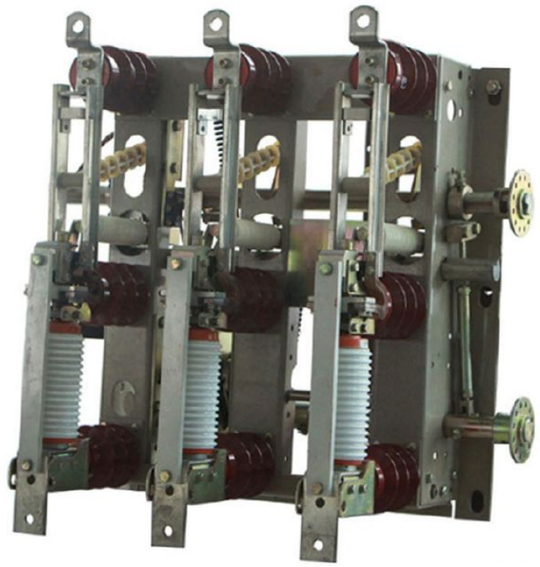
FN[]-24 Load Break Switch



Indoor H.V. Load Switch Witch And Fuse Combination

Key of Power
Electric Professional

FN16A-12 Series Indoor H.V. Vacuum Load-break Switch And Fuse Combination



• Application

- FN16A-12D/630 indoor AC H.V Vacuum load break switch and FN16A-12RD/200-31.5 load switch-fuse combination are developed by our company the products follow GB3804-90《3-62KV AC H.V load switch》and IEC62271《AC H.V.indoor load break switch - fuse combinations》(2002 edition). These switches are small volume, beautiful appearances, flexibleinstallation, and easy operation.
- Load break switch with-fuse combinations are also used for protecting over load of transformer and avoiding short -circuit current.

• Main Application

- FN16A-12D/load switch and FN16A-12RD/200-31.5 switch-fuse combination are suitable for the pwer systems with AC 50Hz rated voltage 6-10kv. This switch is suitable for the oil less, less repair and frequent operating equipment. This switch can match with CS6-1 Operating mechanism; the operator can directly operate on the switch. The FN16A -12-J switch can operate manually (manual handle) and automatically (motor).

• Type and meaning

FN	16A	-	12	D	/	630	-	S J
Indoor load switch	Designed code		Rated voltage (kV)	Withearth switch		Rated current		S: handle operation J: motor operation

Key of Power
Electric Professional
Indoor H.V. Load Switch Witch And Fuse Combination
FN16A-12 Series Indoor H.V. Vacuum Load-break Switch And Fuse Combination

• Service condition

a.The ambient air temperature Max:+40℃ Min:-25℃
b.The relative humidity:monthly average≤90% daily average≤95%
c.The altiude does ot exceed 1000m
d.The ambient don't have corroder and the flammability gas.Etc
e.The working situation without frequent violent

• Main Technical Information

1. FN16A-12D/630 load break switch-fuse combinations technical data:

No.	Description	Unit	Data
1	Rated voltage	KV	12
2	Rated frequency	Hz	50
3	Rated current	A	630
4	Rated breaking capacity for active circuits	A	630
5	Rated closed switch-off current	A	630
6	5% Rated breaking capacity for active circuits	A	31.5
7	Breaking capacity for no-load line and cables	A	10
8	Rated capacity breaking capacity	A	400
9	Rated breaking capacity for no-load transformer		1600VKA current of no-load transformer
10	1min power frequency withstand voltage<value> (to earth and between poles, across vacuum interrupterdistance/ across isolating distance)	KV	42/48
11	Lighting impulse withstand voltage <peak> (to earth and between poles, across vacuum interrupter distance/ acrossisolating distance)	KV	75/85
12	Rated short-time withstand current (heat-steadily)	KVIS	20/3
13	Rated peak withstand current (machine-steadily)	KV	50
14	Rated short-circuit controlled current	KV	50
15	Rated current breaking times	Cycle	10000
16	Mechanical life	Cycle	10000
17	Contact allowed fret thickness	mm	3
18	Switch on-and-off operating moment	Nm/(N)	120(240)
19	Rated switch-on operate voltage/current	V/A	~220/0.5
20	Rated switch-off operate voltage/current	V/A	~220/3

2.FN16A-12RD/200-31.5 load break switch-fuse combination technical data:

No.	Description	Unit	Data
1	Rated voltage (the highest working voltage)	KV	12
2	Rated frequency	Hz	50
3	The Max. current of fuse	A	200
4	Rated transfer current	A	3150
5	Switch-off time by fuse striking	ms	$31\ ^{+5}_{0}$
6	Rated short-circuit switch-off current (prospective peak)	KA	31.5
7	Rated short-circuit controlled current (prospective peak)	KA	80
8	1min power frequency withstand voltage (value) (to earth. Between poles/across isolating distance)	KV	42/48
9	Lighting impulse resisiting voltage (peak)(to earth, between poles/Across isolating distance)	KV	75/85
10	Fuse striker output enerty	J	2-5

3. Isolating switch technical data:

No.	Description	Unit	Data
1	Three phase switch-on position not the same period	mm	≤3
2	Each phase switch-on position not the same period	mm	≤2
3	The front pressure of contact	N	200±20
4	The minimum distance between static contact and the end of isolate pole of contract	mm	≥150
5	Main return circuit resistance between fixed contact and upper support	υ Ω	≤100

4.The technical data of the fuse:

Type	Rated voltage	Fuse rated current (A)	Rated breaking current(kA)	Fuse body rated current(A)
SDLAJ,XRNT□	12	40	50	6.3,10,16,20,25,31.5,40
SDLAJ,XRNT□		100		50,63,71,80,100
SDLAJ,XRNT□		125		125
SIBA	12	200	40	160,200

5. Vacuum interrupter technical data

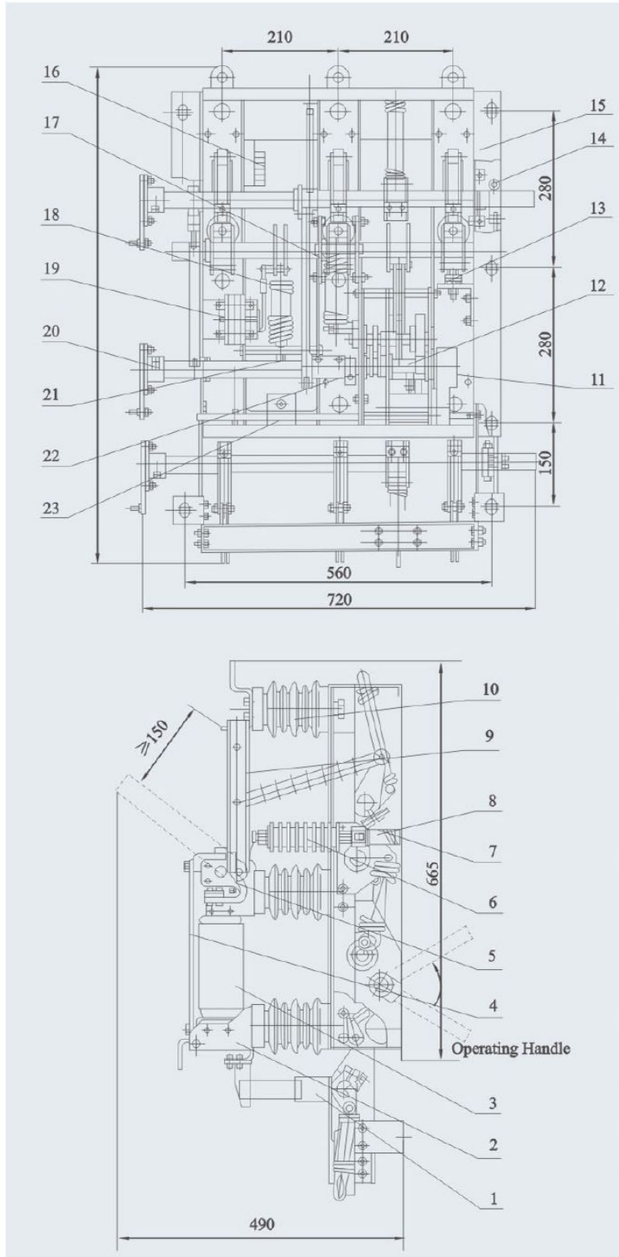
No.	Description	Unit	Data
1	Contact distance	Mm	≤8 $^{+1}_{0}$
2	Overtravel	mm	≤5 $^{+1}_{0}$
3	Average switch-off speed	m/s	06±0.2
4	Average switch-off speed	m/s	1±0.2
5	There-phase contact switch on-and-off not the same period	ms	≤2
6	Contact switch-on jump time	ms	≤2
7	Distance between charged bodies and between phase and ground	mm	≥125
8	Main return circuit resistance between upper and lower support	υ Ω	≤60

6. Earth switch technical data

No.	Description	Unit	Data
1	The positive pressure of contact	N	200±200
2	The square of touching		≥2/3
3	Three phase switch-on position not the same period	mm	≤3
4	Each phase switch-on position gradient	mm	≤1.5
5	The speed of switch-on	m/s	≥2.5

• Appearance diagram

Fig.1 FN16A-12D/630 load break switch overall and dimension



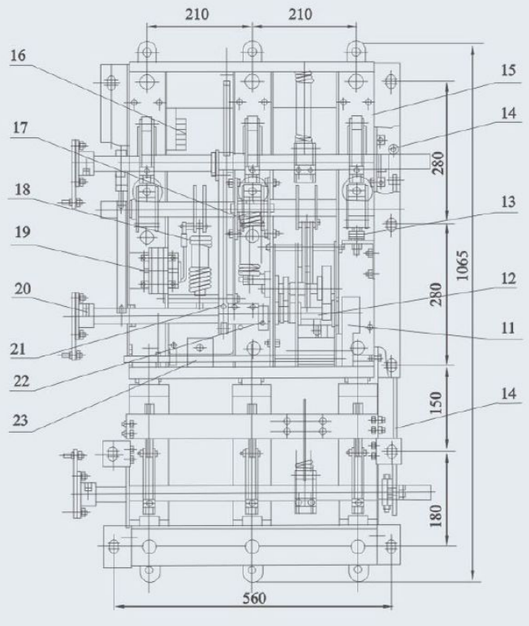
1. Earth switch
2. Lower supper
3. Vacuum interrupter
4. Insulating post
5. Upper supper
6. Insulating pole
7. Enveloper
8. Spring bar
9. Isolating blade
10. Insulator
11. Motor
12. Operating mechanism
13. Switch-off cushion
14. Interlock mechanism
15. Common base frame
16. Connection terminal
17. Switch-on spring
18. Switch-off spring
19. Auxiliary switch
20. Operated mechanism (front operated)
21. Isolating switch operated hole(back operate)
22. Load switch operated hole (back operate)
23. Tripping gear

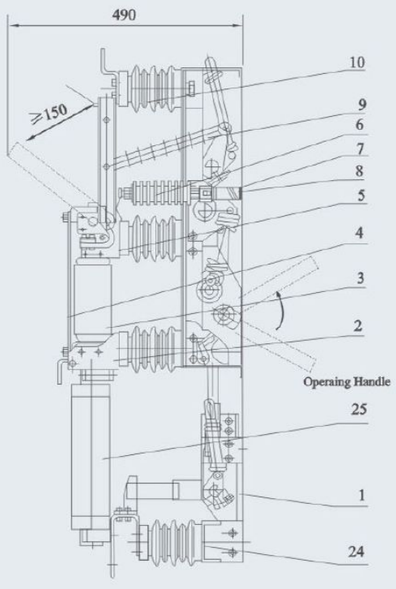
Indoor H.V. Load Switch Witch And Fuse Combination

Key of Power
Electric Professional

FN16A-12 Series Indoor H.V. Vacuum Load-break Switch And Fuse Combination

FN16A-12RD/200-31.5 load break switch-fuse combinations overall and dimension





1. Earth switch
2. Lower supper
3. Vacuum interrupter
4. Insulating post
5. Upper supper
6. Insulating pole
7. Enveloper
8. Spring bar
9. Isolating blade
10. Insulator
11. Motor
12. Operating mechanism
13. Suitch-off cushion
14. Interlock mechanism
15. Common base frame
16. Connection wiring terminal
17. Switch-on spring
18. Switch-off spring
19. Auxiliary switch
20. Operate mechanism (front operated)
21. Isolating switch operate hole (back operate)
22. Load switch operate hole (back operate)
23. Tripping gear
24. Support
25. Fuse

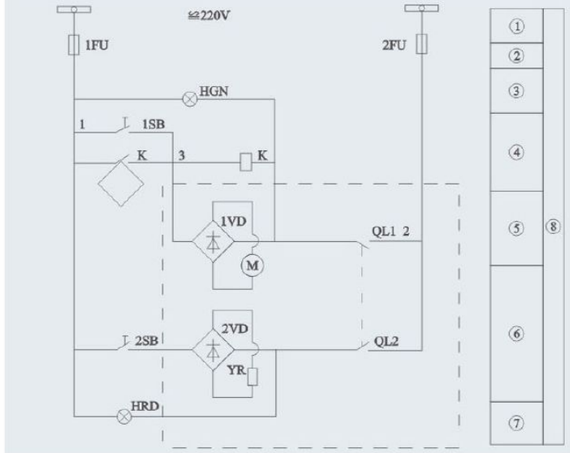
XIKAI®

Key of Power
Electric Professional

Indoor H.V. Load Switch Witch And Fuse Combination

FN16A-12 Series Indoor H.V. Vacuum Load-break Switch And Fuse Combination

The main circuit of the load break switch-fuse combination



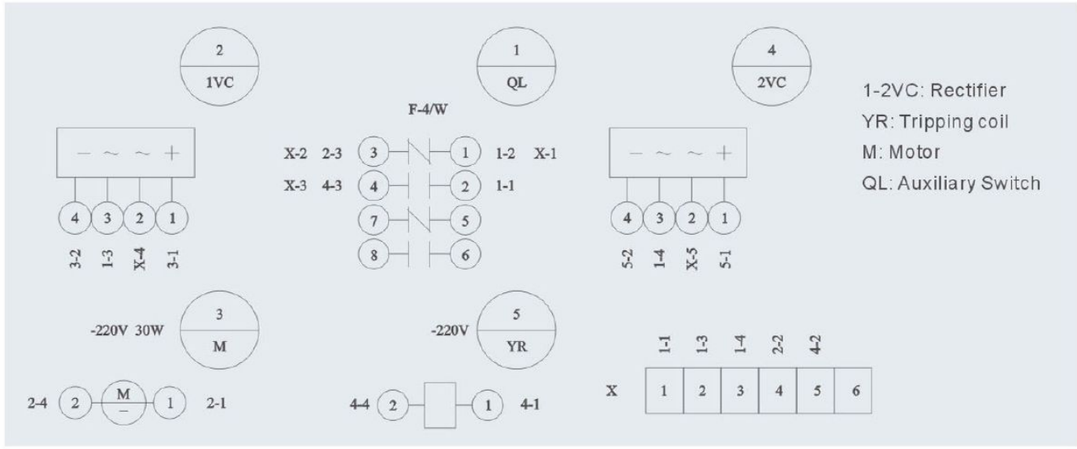
1. Small bus-bar
2. Fuse
3. Switch off indicator
4. Switch on indicator
5. Motor circuit
6. Switch off circuit
7. Switch-on indicator
8. Control circuit

Note: the dotted line is the inner structure of the mechanism

1-2VD	Coordination element	KBPC2520	In the mechanism
YR	Switch-off coil	DC	In the mechanism
K	AC contact	CJT1-10/10A AC200V	
HRD	Red signal light	AD11-25 AC	
HGN	Green signal light	AD11-25 AC	
1-2SB	Push-button switch	LA18-22 AC220V	
QL1-2	Auxiliary switch	F10-22 Ⅱ/W2	In the mechanism
M	Motor	52ZYCJ-220V 30W	In the mechanism
1-2FU	Fuse	RL1-12/6A	

Note: when operated power is AC, the signal light and the auxiliary relay should chose AC type

- **The inner connection diagram**



1-2VC: Rectifier
YR: Tripping coil
M: Motor
QL: Auxiliary Switch

Indoor H.V. Load Switch Witch And Fuse Combination

ZFN21-12D/T630-20 Indoor High Voltage Vacuum Load Break Switch

ZFN21-12DR/T125-31.5 Indoor High Voltage Vacuum Load Break Switch-Fuse Combinations

Key of Power Electric Professional

• General

- ZFN21-12D/T630-20 indoor hith voltage vacuum load break switch is three-phase AC 50Hz indoor hith voltage swithc equipment that is suitable in the rated voltage 12kV power systems. The switch has making, load breaking, breaking load and overload current capability.
- This switch also can break, make idling long-line, the idling transformer and the capacitor.
- ZFN21-12DR/T125-31.5 indoor high vacuum load-breaking switch fuse combination is composed by this load switch and the fuse combination besides has the above function also have the protection function.

• Main technical parameter

1.Mechanical characteristic technical parameter

Item	Unit	Data
Distance of moving contact and fixed contact	Mm	10±1
Overtralel	mm	4±0.5
Average closing speed	m/s	0.6±0.2
Breaking opening speed (be fore distance of moving and fixed contact 6mm)	m/s	1.1±0.2
Three-phase contact closing/opering asynchrunous	3ms	≤2
Contact closing bounces time	ms	≤2
Air distance between charged body and to earth	mm	≥125
Between upper and lower support main loop resistance	υ Ω	≤70

XIKAI®

Indoor H.V. Load Switch Witch And Fuse Combination

ZFN21-12D/T630-20 Indoor High Voltage Vacuum Load Break Switch

ZFN21-12DR/T125-31.5 Indoor High Voltage Vacuum Load Break Switch-Fuse Combinations

Key of Power Electric Professional

2.Load switch main technical parameter

Item	Unit	Data
Rated voltage	kV	12
Rated frequency	Hz	50
Rated current	A	630
Rated active load breaking current	A	630
Rated closed hoop breaking current	A	630
5% rated active load breaking current	kA	31.5
Rated cable change breaking current	A	10
Rated idling transfomer capacity	kV	1250
1min power frequency withstand voltage:(Vacuum fracture, phase direction, phase to earth/isolation fracture)	kV	42/48
Lightning surge withstand voltage:(vacuum fracture, phase to phase, phase to earth/isolation fracture)	kV	75/85
Rated stort-time withstand current (thermal stable)	kA/S	20/4
Rated peak value withstand cuuren (peak withstand stably)	kA	5
Rated short-circuit making current	kA	50
Rated current breaking times	Time	10000
Mechanical life	Time	10000
Vacuum explosion chamber contact permission attrition thickness	mm	2
Manual operation moment	Nm	≤200

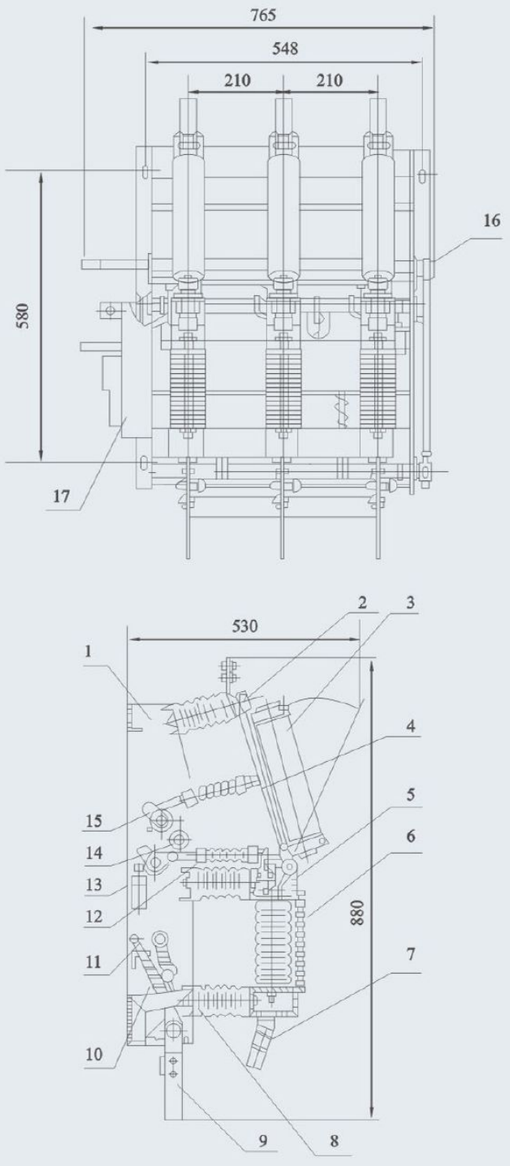
3.Combination electric appliance engineering parameter

Item	Unit	Data
Rated voltage	kV	12
Rated frequency	Hz	50
Rated current	A	125
Ratedactive load breaking current	A	3150
Fuse trigger switch on/off time	ms	40±5
Rated short-circuit breaking current (effective value)	kA	31.5
Rated short-circuit making current (peak value)	kA	50
1min power frequency withstand voltage:(Vacuum tracture., Phase to phase, phase to earth/isolation fracture)	kV	42/45
Lightning surge withstand voltage:(vacuum fracture, phase to phase, phase to earth/isolation fracture)	kV	75/85
Fuse ram output energy	J	2-5

Indoor H.V. Load Switch Witch And Fuse Combination

ZFN21-12D/T630-20 Indoor High Voltage Vacuum Load Break Switch
ZFN21-12DR/T125-31.5 Indoor High Voltage Vacuum Load Break Switch-Fuse Combinations

• Appearance diagram



1.Common base frame
2.Isolating blade
3.Fuse
5.Upper support
6.Vacuum interrupter
7.Earth blade static contact
8.Insulator
9.Earth blade
10.Earth spring
11.Switch-off spring
12.Insulating pole
13.Spindle
14.Tripping gear
15.Auxiliary shaft
16.Coupled pole
17.Operating mechanism

Indoor H.V. Load Switch Witch And Fuse Combination

FZ(R)N21-40.5D Indoor High Voltage Alternating-current Vacuum Load Switch-fuse Combination

• General

FZ(R)N21-40.5D indoor high-volage alternating-currentvacuumload switch-fuse combination("combination" for short) is used in power
systems with an AC frequency of50Hz andaratedvoltage of40.5kVto breakload currents, overload currents and short-circuit currents. It particularly applies to the places needingcontrol,protection for oil-freemaintenancefree, frequentlv-operated and ring network power supply
units and terminal power supply transformers
Thecombinationischaracterized bvlarge breakingcapacity.high safetyand stability, longelectrical life, support for frequent operation, less
maintenanceetc.It has an apparentisolatinggapan earthing switch withmaking capablity, an electric spring actuator and remote contro capability.

• Product Standards

FZ(R)N21indoorload switch isproduced in line with the following standards and codes
- GB16926-1997High-voltage alternating-current load switch-fuse combinations
- EC60420 High-voltage alternating-current load switch-fuse combinations

• Operating Conditions

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

• 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	1 min 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

Indoor H.V. Load Switch Witch And Fuse Combination

FZ(R)N21-40.5D Indoor High Voltage Alternating-current Vacuum Load Switch-fuse Combination

Key of Power Electric Professional >

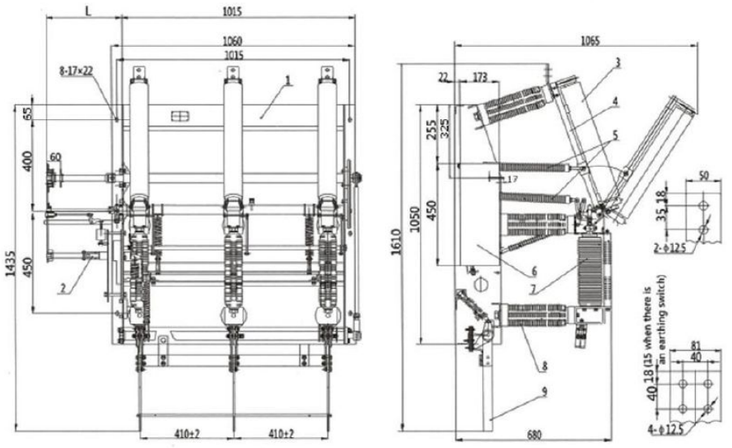
Technical parameters of the vacuum load switch

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 groud distance	mm	≥300
Circuit resistance between the upper and lower brackets	μΩ	≤80

Overall and Installation dimension

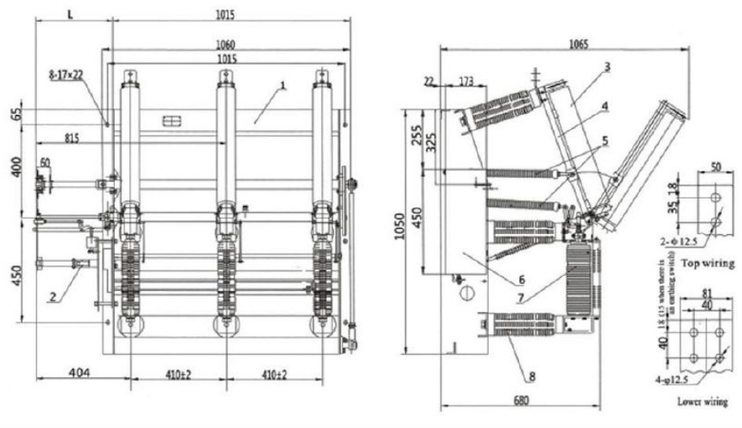
Overall dimension of FZ(R)N21-40.5 indoor high-voltage alternating-current vacuum load switch(side installation and left hand operation)

L: distance between the actuator andthe frame(itis usually330mm 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 betweentheactuator and theframeitis usually330mm,or430mm or 530mm upon request of the user.)



Indoor H.V. Load Switch Witch And Fuse Combination

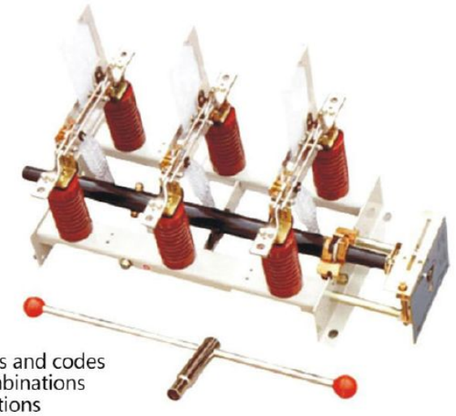
FN7-12(R) Indoor load switch-fuse combination

Key of Power Electric Professional >

General

FN7indoor load switchis used in power systems with an ACfrequency of50Hz and arated voltage of 10kVto break load currents. overload currents and short-circuit currents.It particularly applies to the places needing controlprotection for oil-free. maintenance-free and frequently -operatedringnetworkpower supply units and termina power supply transformers.

Thecombination scharacterized byargebreaking capacityhigh safety andstability,long electrical life support for frequent operation, less maintenance. etcIt has an apparentisolating gapan earthing switchwith making and breaking capability, an electric soring actuator and remote control capability.



Product standards

FN7indoorload switchis produced in line with the following standards and codes

- GB16926-1997High-voltage alternating-currentload switch-fuse combinations
- EC60420 High-voltage alternating-current load switch-fuse combinations

Operating conditions

Normal operating conditions

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

Technical parameters

Specification and parameters of FN7-12 Note:(–)No,(Δ)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	Δ	–	Δ	–	–	–
		FN7-12DXL	–	Δ	Δ	–	–	–
		FN7-12R	–	–	–	Δ	–	–
		FN7-12DSLR	Δ	–	Δ	Δ	–	–
		FN7-12DXLR	–	Δ	Δ	Δ	–	–
	With an impact release	FN7-12RA	–	–	–	–	Δ	–
		FN7-12RAF	–	–	–	–	Δ	Δ
		FN7-12DXLRA	–	Δ	Δ	–	Δ	–
		FN7-12DXLRAF	–	Δ	Δ	–	Δ	Δ

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

Indoor H.V. Load Switch Witch And Fuse Combination

FN7-12(R) Indoor load switch-fuse combination

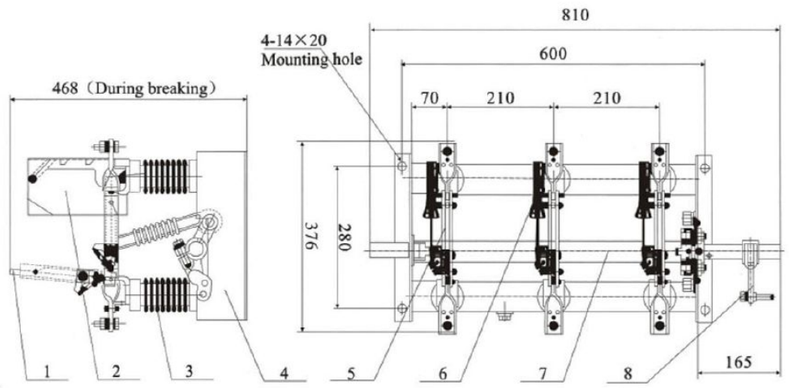
Fuse rated parameters (High-voltage fuse factory)

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

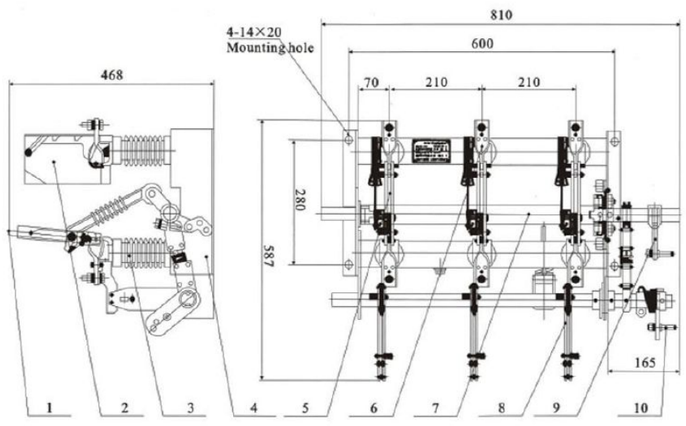
Overall and Installation dimension

Overall dimension of FN7-12 load switch



1.Arcsuppression switch2.Arcing contact and arc suppression chamber
3.Insulator4Base 5.Movable contact switch 6. Fixed contact switch
7. Spring energy storage mechanism in the m ain shaft sleeve)
8. Master swit ch making-breaking lever

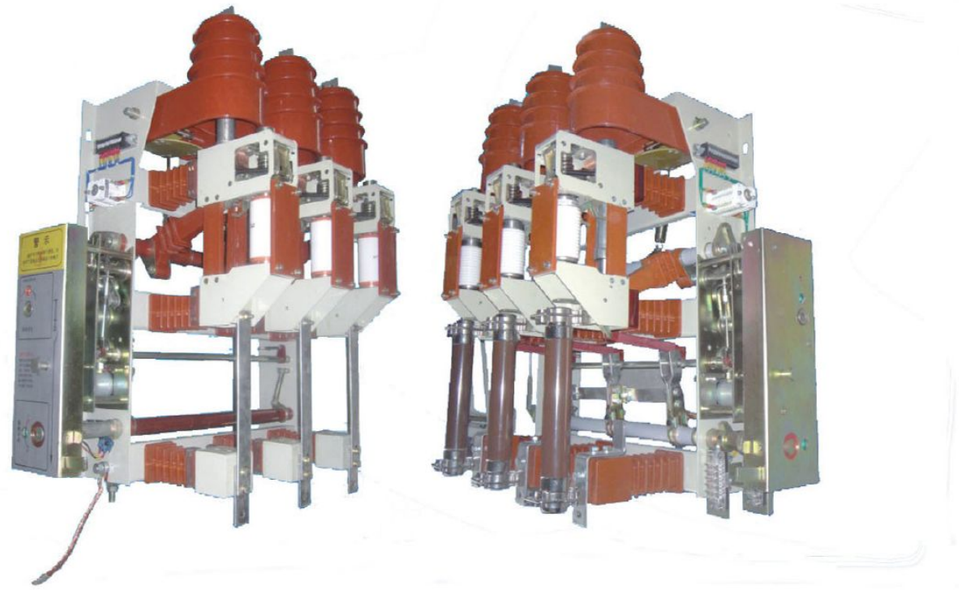
Overall dimension of FN7-12DXL load switch



1.Arcsuppressionswitch2.Arcing contact and arc suppression chamber 3.Insulator
4.Base 5.Movable contact switch 6. Fixed contact switch
7.Springenergystoragemechanism (in the main shaft sleeve8.Earthing switch
9.Master switchmaking-breaking lever 10.Earthing switch m aking breaking lever.

Indoor H.V. Load Switch Witch And Fuse Combination

FZN25-12D/T630-20 Indoor High Vacuum Load-breaking Switch
FZRN25-12D/T125-31.5 Indoor High Vacuum Load-breaking Switch-fuse Combination



• General

- FZN25-12D/T630-20 Indoor AC high voltage load-breaking switch is three-phase AC 50Hz, rated voltage 12kV indoor installation, which is suitable for using in industry and mining situation and so on enterprise substation and transformer substtion for protection and controlling the electrical facility, uses in Off and ON load current, closed loop current, idling transformer and cable charging current. It has manual and electrical motor operating mechanism that isadvantageous to realize three remote controls requirement of power system.
- FZRN25-12D/T□-31.5 Indoor AC high voltage vacuum load switch-the fuse combination electric appliance is three-phase AC 50Hz, rated voltage 12kV indoor installment, which is suitable for load control and short-circuit protection using in industry and mining situation and so on enterprise substation and transformer substation. It is equiped with the earthing switch that may withstand short-circuit current the operating mechanism can be possible manual and electricaliy operated that is advantageous to realize three remote controls requirement of electrical power system.
- FZN25-12D, FZRN25-12D load switch and combination electric appliance are suitable for load control and to short-circuit the protection in three-phase ring net or the terminal power supply urban district power distribution station and the industry consumer. Because the combined electric appliance has more reliable. Econnomical protection function than circuit breaker electrical appliance equipment such as the transformer, especially for the ring net, double rdiation power supply unit and box type transformer substation.

• Main Technical Parameter

1.Load switch main technical paameter

No.	Description		Unit	Data	
				FZN25-12D/T630-20	FZRN25-12D/T125-31.5
1	Rated voltage		kV	15	
2	Rated frequency		Hz	50	
3	Rated current		A	630	125
4	Rated insulation level	1 min power frequency with stand voltage	kV	Explosion chamber fracture 30;	
				To earth, phase to phase 42; Isolation fracture 48;	
		Lighting impulse withstand voltage (peak value)	kV	To earth, phase to phase 75; Isolation fracture 85;	

Indoor H.V. Load Switch Witch And Fuse Combination

FZN25-12D/T630-20 Indoor High Vacuum Load-breaking Switch

FZRN25-12D/T125-31.5 Indoor High Vacuum Load-breaking Switch-fuse Combination

5	Rated dynamic current (peak value)	kA	50	
6	4 seconds heat-stable current	kA	20	
7	The rating active the load breaking current	A	630	
8	Rated closed loop breaking current	A	630	
9	Rated cable charge breaking current	A	10	
10	Rated breaking idling transformer capacity	kVA	1600	
11	Rated shift electric current	A		2000
12	Fuse model			SDLAJ-12 SFLAJ-12
13	Ram output energy	J		2-5(middle grade)
14	Rated short-circuit making electric current	kA	50	
15	Earthing switch rated peak withstand current	kA	50	
16	Earthing switch 2s thermal stable current	kA	20	
17	Auxiliary loop rated voltage	V	≌220 ≌110	
18	Mechanical life	Time	10000	

2.Mechanical characteristics parameter

No.	Description	Unit	Data	
			FZN25-12D/T630-2	FZRN25-12D/T125-31.5
1	Between charged body and to earthing air distance	mm	> 125	
2	Depth of conduct tube insertiing fixed contact seat		≮18	
3	Distance between moving and fixed contact of vacuum explosion chamber		6^{+1}_{0}	
4	Vacuum explosion chamber contact pressure spring compression amount		2^{+1}_{0}	
5	Vacuum explosion chamber average switchon speed		0.6±0.2	
6	Vacuum explosion chamber average switchoff speed	m/s	0.9±0.2	
7	Closing bounce time	m/s	≤2	
8	Three-phase closing/opening synchroneity		≤3	
9	Main return toute resistance	μΩ	≤150	≤300
10	Manual operation maximum moment	Nm	≤160	
11	Fuse trigger opening time	ms	30-40	
12	Release trigger opening time		40-50	

3.Stoed enrygy motor parameter

No.	Rated voltage(V)	Rated current(A)	Rated power (W)	Normal work voltage scope
66ZY-CJ01B	DC220	0.7	70	85%-110% Rated voltage
66ZY-CJ02B	DC110	1.5		

XIKAI®

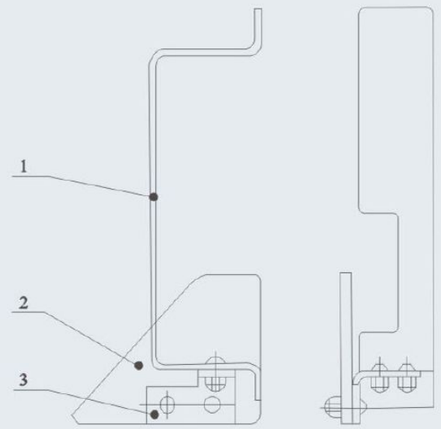
Key of Power Electric Professional

Indoor H.V. Load Switch Witch And Fuse Combination

FZN25-12D/T630-20 Indoor High Vacuum Load-breaking Switch

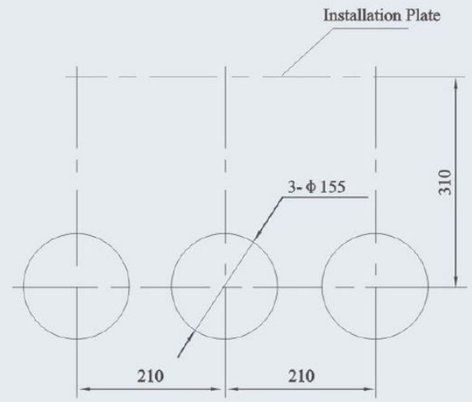
FZRN25-12D/T125-31.5 Indoor High Vacuum Load-breaking Switch-fuse Combination

Appearance diagram



Linkage structure

1.Bead plate 2.Gradient plate 3.Linkage plate



Hole Dimension

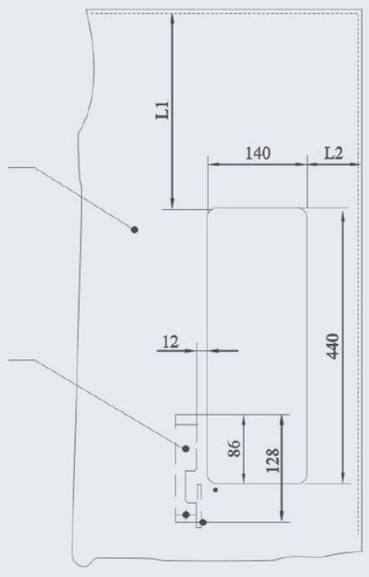
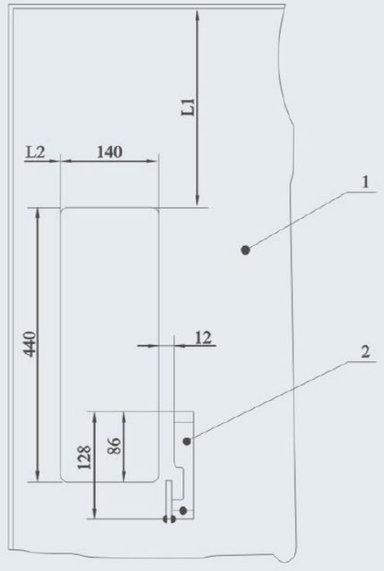


Plate linkage dimension

1.Plate 2.Linkage



The back view of gear dimension

Hole Dimension:340×120

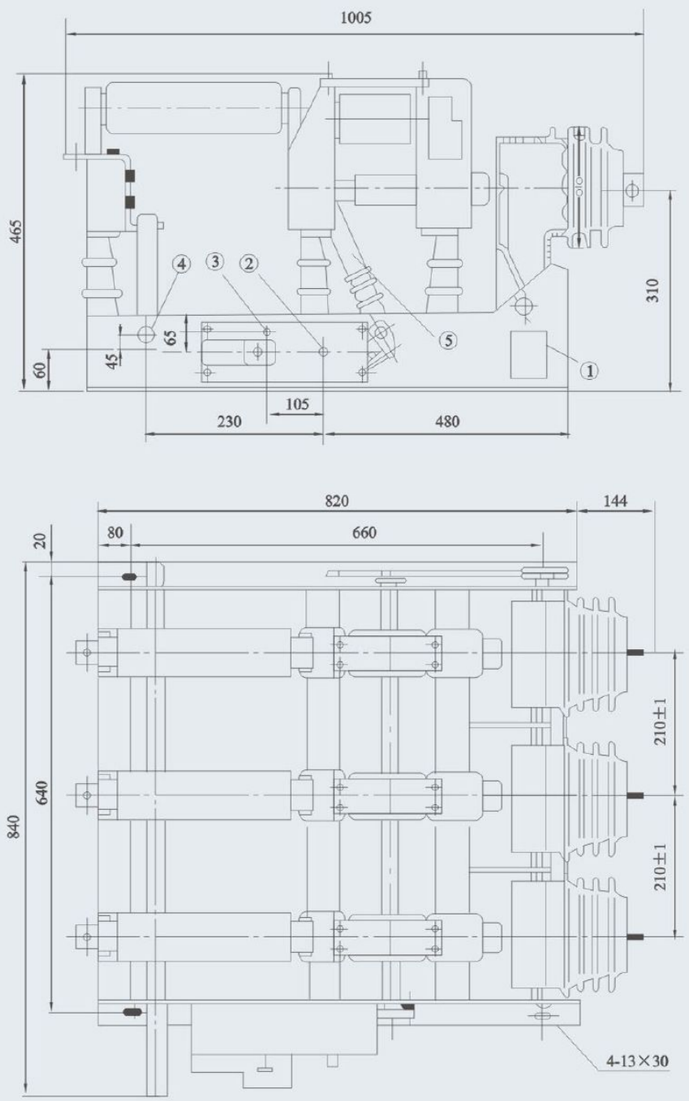
Note: L1、L2 dimension is choose by user

Indoor H.V. Load Switch Witch And Fuse Combination

FZN25-12D/T630-20 Indoor High Vacuum Load-breaking Switch

FZRN25-12D/T125-31.5 Indoor High Vacuum Load-breaking Switch-fuse Combination

- **Appearance diagram**



Operating right (without panel)

1.Name plate 2.Enerty-storing axle 3.Tripper 4.Earth blade axle 5.Operating bar

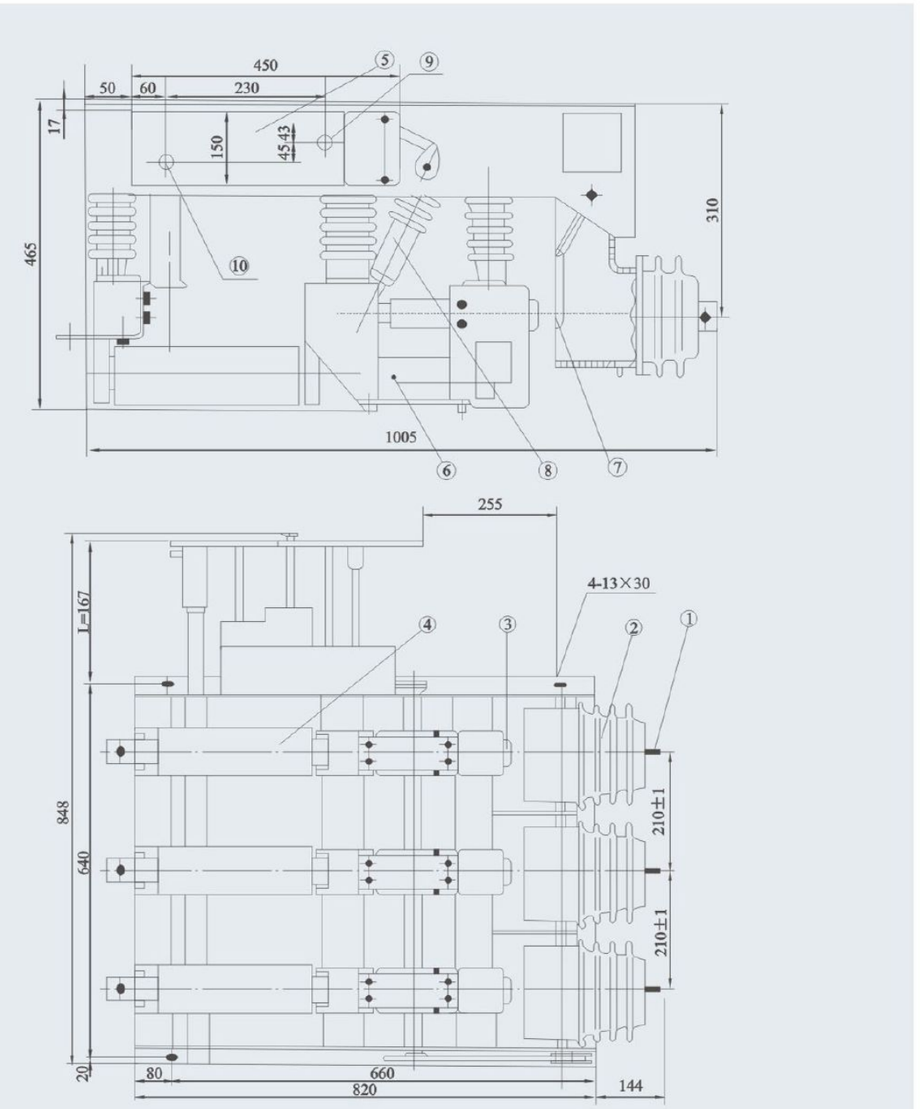
XIKAI®

Key of Power
Electric Professional

Indoor H.V. Load Switch Witch And Fuse Combination

FZN25-12D/T630-20 Indoor High Vacuum Load-breaking Switch

FZRN25-12D/T125-31.5 Indoor High Vacuum Load-breaking Switch-fuse Combination



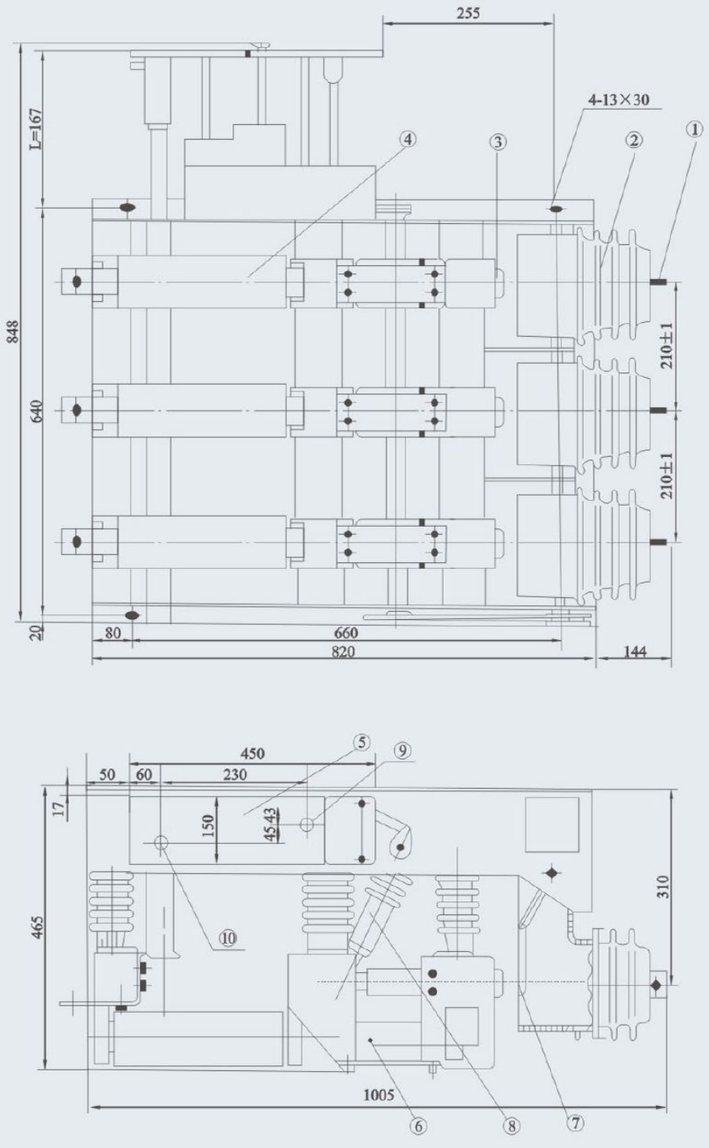
Operatig right (with panel)

1.Fixed contact 2.Insolating cover 3.Electric conduction tube 4.Fuse 5.Panel 6.Vacuum Interrupter
7.Move door 8.Operating bar 9.Operating (Left/Right) 10.Energy-storing axle hole 11.Earthing blade axle hole
L=167mm(normal size) The cabinet size: Length 900 Width 650 Height 2000

Indoor H.V. Load Switch Witch And Fuse Combination

FZN25-12D/T630-20 Indoor High Vacuum Load-breaking Switch

FZRN25-12D/T125-31.5 Indoor High Vacuum Load-breaking Switch-fuse Combination



Operating Left(with panel)

1.Fixed contact 2.Insolating cover 3.Electric conduction tube 4.Fuse 5.Panel 6.Vacuum Interrupter
7.Move door 8.Operating bar 9.Energy-storing axle hole 10.Earthing blade axle hole

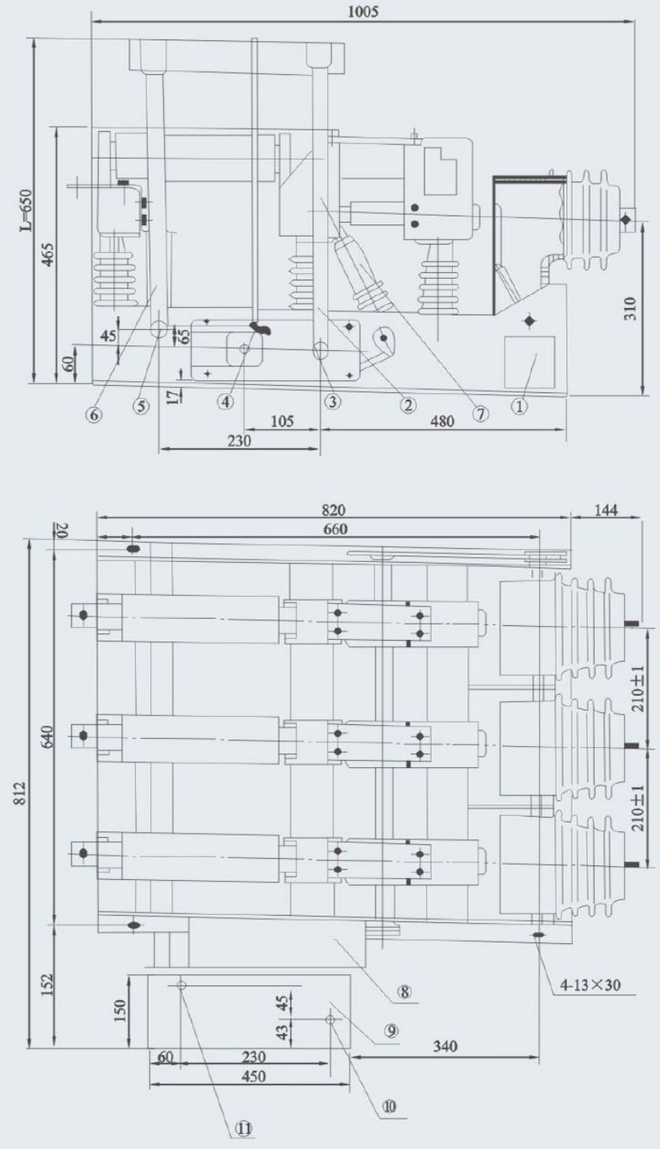
XIKAI®

Key of Power
Electric Professional
>

Indoor H.V. Load Switch Witch And Fuse Combination

FZN25-12D/T630-20 Indoor High Vacuum Load-breaking Switch

FZRN25-12D/T125-31.5 Indoor High Vacuum Load-breaking Switch-fuse Combination



Operating front (with panel)

1.Name plate 2.Energy-stroing axle bar 3.Energy-storing bearing 4.Tripper 5.Earthing blade bearing
6.Blade bearing operating bar 7.Operating bar 8.Operating mechanism 9.Panel
10.Energy-storing axle hole 11.Earthing blade axle hole

Indoor H.V. Load Break Switch

FK(R)N12A-12 Series Air Pressure Type Load Switch (Fuse Combined Electrical Apparatus

Key of Power
Electric Professional
>

• Overview

- FKN12A-12D pneumatic load switch, FKRN12A-12D series pneumatic load switch with fuse box,suitable for 12kV and below the three-phase distribution system, as the control and protection of transformers, cables, overhead lines and other electrical equipment use; terminal substation and substation is especially suitable for city network. rural power network. It is suitable for control and protection ring, double radiant no unit.
- FKN12A-12D series pneumatic load switch can be divided and load current and overload current.
- FKRN12A-12D series pneumatic load switch with fuse box can be divided and load current, overload current, breaking short circuit current.

• Meaning of type

F	Z	N	12	A	-	12	D	/	T	630	-	20
Load switch	Air medium	Indoor	Design of serial number	Derivative code		Rated voltage (kV)	Earthing switch		The spring mechanism (A)	Rated current (A)		Rated short-time withstand current (kA)

F	Z	R	N	12	A	-	12	D	/	T	630	-	20
Load switch	Air medium	Fuse protection	Indoor	Design of serial number	Derivative code		Rated voltage (kV)	Earthing switch		The spring mechanism (A)	Fuse Rated current(A)		Rated short-circuit breaking current (kA)

Description:the spring mechanism is divided into manual spring mechanism, electric operation spring mechanism.

Indoor H.V. Load Break Switch

FK(R)N12A-12 Series Air Pressure Type Load Switch (Fuse Combined Electrical Apparatus

Key of Power
Electric Professional
>

• Working environment

- The ambient air temperature limit: +40℃, -25℃ lower;
- The altitude does not exceed 1000m;
- Relative humidity: daily average value not more than 95%, on average less than 90%;
- Seismic intensity does not exceed 8 degrees;
- No fire, explosion, chemical corrosion and severe vibration of the place;
- Pollution level: II

• Structure characteristics

1, load switch, grounding switch, fuse and institutions in a framework, flexible combination, compact structure, small size, convenient installation and simple;
2,the fracture is the straight type layout,dynamic.Thermal stability current parameters, completed a one-time operation;
3,withe the static contact insulation cover, the ring network cabinet in the structure to realize the isolation, eliminating the interphase insulating clapboard, fracture insulation board, can prevent the cabinet arc short-circuit accident;
4,has the unique structure of the load switch valve, gate. Valve will automatically break isolation, good protective performance;A mechanism locking device reliable between
5, load switch and earthing switch.fuse, meet the requirements cf "Five-";
6,with manual operation and AC/DC operating power supply of electric operation in two forms, to facilitate the realization of power system "three".

Techinical data

No.	Item			Unit	Parameter	
					FKN12A-12D	FKRN12A-12D
1	Rated voltage			kV	12	12
2	Rated frequency			Hz	50	50
3	Rated current			A	630	125
4	Rated insulation level	1 min power frequency withstand voltage	On the/interphase	kV	42	42
			Isolation fracture		48	48
		Lightning impact withstand voltage(Peak)	On the/interphase		75	75
			Isolation fracture		85	85
5	Rated short-time withstand current		Load switch	kA	20	-
			Earthing switch		20	
6	Rated short-circuit duration		Load switch	S	4	-
			Earthing switch		2	
7	Rated short-circuit current (peak)				50	-
8	Rated short-circuit breaking current		Acfive load breaking current	KA	630	-
			Closed loop breaking current		630	-
			5% active load breaking current		31.5	-
			Cable charging current	A	10	-
			Breaking no-load transformer capacity		1250	
9	Rated short-circuit breaking current (current limiting fuse)			kVA	-	-
10	Rated current			kA	-	-
11	The life of the machine			A	2000	2000
12	The impactor energy output			次	-	-
13	Fracture opening distance			J	⩾175	
14	Interphase center distance				210±2	
15	And the air gap				⩾125	
16	Trip			mm	210±4	
17	Overtravel				⩾40	
18	Three-phase switching in different period				⩽10	
19	Three-phase tripping in different period			ms	⩽5	
20	Shunt release natural tripping time				40~65	
21	The main loop resistance			μΩ	⩽130	

Indoor H.V. Load Break Switch And Fuse Combination Apparatus

FLRN36-12D/125

Key of Power
Electric Professional
>

Introduction

FLRN36indoorAChighvoltageload break switch and fuse combination (combinatian in short)is acomprehensive and new combination apparatus produced by using the mature experience in home and foreign advanced technique.it is a complement apparatus of HXGN □-12AC metal-enclosed ring main unit and it meetrequirement of users in different power system. It has the adiantages such as simple structure, easy maintenance, strong arc-extinction capability, high gap insulating level and high reliability.It accords to IEC420,IEC62271-105,GB16926 &GB/T 11022 standards.

Meaning of type

F L R N 36-12 D / 125 - 50

- 50 — Rated short- circuit breaking current(kA)
- 125 — Rated current(A)
- D — Earthing switch
- 12 — Rated voltage(kV)
- 36 — Design serial No
- N — Indoor
- F — Fuse
- R — Arc medium(SF6)
- L — Load break switch

Working environment

1.Altitude:≤1000m;
2.Ambient temperature:-25℃~+40℃;
3.Relative humidity: daily average ≤95%, monthly average ≤90%;
4.Earthquake intensity: ≤8 degree;
5.Occasionswihoutflammable and explosive matter, without corosive chemical and frequent severe vibration

Technical data

No	Item	Unit	Load break switch	Combination
1	Rated voltage	kV	12	12
2	Rated current	A	630	125
3	Rated frequency	Hz	50/60	50/60
4	Rated short-circuit makingh current (peak)	kA	50	/
5	Rated short-time withstand current	kA	20	/
6	Rated peak withstand current	kA	50	/
7	Rated short-circuit duration	S	4	/
8	Rated active load breaking current	A	630	/
9	Rated closed-loop breaking current	A	630	/
10	Rated cable charging current	A	10	/

XIKAI®

Key of Power
Electric Professional
>

Indoor H.V. Load Break Switch And Fuse Combination Apparatus
FLRN36-12D/125

11	5% of rated active load breaking current			A	31.5 /
12	Rated short-circuit breaking current			kA	/ 50
13	Rated transfer current			A	/ 1550
14	Rated insulating level	1min .PF withstand voltage	phase-phase,to earth	kV	42 42
			across open contacts	kV	49 49
		Lightning impulse withstand voltage	phase-phase,to earth	kV	75 75
			across open contacts	kV	85 85
15	Circuit resistance of each pole			μΩ	≤70 (not exclude fuse resistance)
16	Mechanical life of load break switch			Times	2000 2000
17	Rated short-time withstand current of earthing switch			kA	20 20
18	Rated peak withstand current of earthing switch			kA	50 50
19	Rated short-circuit duration of earthing switch			S	4 4
20	Rated short-circuit making current of earthing switch			kA	50 50
21	Mechanical life of earthing switch			Times	2000 2000

Indoor H.V. Load Break Switch And Fuse Combination Apparatus

FLRN36-12D/125

Key of Power
Electric Professional
>

Introduction

FLRN48 indoor AC high-voltage load break switch and fuse combination apparatus is a new composite apparatus produce by using mature experience and foreign advanced technique.It is a complement apparatus of HXGN□-12AC metal- enclosed switch gear and it canfoms to requirement of different power system. It features with simple struclure, easy maintenance, strong arc extinguish cap ability, high gap insulating level and high reliability.It accords to IEC420,GB16926 and GB/T11022.

Meaning of type

F L R N 36-12 D / 125 - 50

- 50 — Rated short circuit breaking curent
- 125 — Rated current
- D — Earthing switch
- 12 — Rated voltage
- 36 — Design serial No.
- N — Indoor
- R — Fuse
- L — SF6
- F — Load break switch

Technical data

No.	Item	Unit	Load break switch	Combination
1	Rated voltage	kV	12	12
2	Rated current	A	630	125
3	Rated frequency	Hz	50	50
4	Rated short-circuit making current (peak)	kA	50	/
5	Rated short-time withstand current	kA	20	/
6	Rated peak withstand current	kA	50	/
7	Rated short-circuit duration	s	4	/
8	Rated active load breaking current	A	630	/
9	Rated closed breaking current	A	630	/
10	Rated cable charging current	A	10	/
11	5% of rated active load breaking current	A	31.5	/
12	Rated short-circuit breaking current	kA	/	50

XIKAI®

Key of Power
Electric Professional
>

Indoor H.V. Load Break Switch And Fuse Combination Apparatus
FLRN36-12D/125

13	Rated transfer current			A	/	1550
14	Rated insulating level	1 min.PF withstand voltage	Phase to phase to earth	kV	42	42
			Across open contacts	kV	49	49
		Lightning impulse withstand voltage	Phase to phase to earth	kV	75	75
			Across open contacts	kV	85	85
15	Circuit resistance of pole			μΩ	≤70 (exclude fuse resistance)	
16	Mechanical life of load break switch			Times	2000	2000
17	Rated short-time withstand current of earthing switch			kA	20	20
18	Rated peak withstand current of earthing switch			kA	50	50
19	Rated short-circuit duration of earthing switch			s	4	4
20	Rated short-circuit making current of earthing switch			kA	50	50
21	Mechanical life of earthing switch			Times	2000	2000