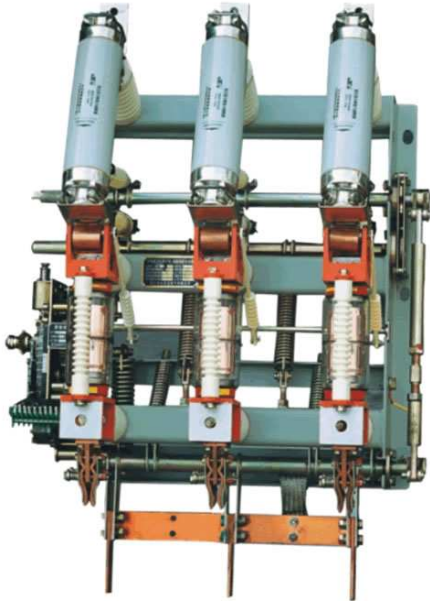


12KV Vacuum Load Break Switch(FZN21 Series)



1. Load Break switch main technical parameters: Model No.: FZN21-12D/T630-20

| No | Item | Unit | Data |
|----|---|------|-------|
| 1 | Rated voltage | kV | 12 |
| 2 | Rated frequency | Hz | 50 |
| 3 | Rated current | A | 630 |
| 4 | Rated active load breaking current | A | 630 |
| 5 | Rated closed load breaking current | A | 630 |
| 6 | 5% rated active load breaking current | kA | 31.5 |
| 7 | Rated cable charge breaking current | A | 10 |
| 8 | Rated idling transformer capacity | kVA | 1250 |
| 9 | 1min power frequency withstand voltage | kV | 42/48 |
| 10 | Lighting surge withstand voltage | kV | 75/85 |
| 11 | Rated short-time withstand current | Ka/S | 20/4 |
| 12 | Rated peak value withstand current | kA | 5 |
| 13 | Rated short-circuit making current | kA | 50 |
| 14 | Rated current breaking times | time | 10000 |
| 15 | Mechanical life | time | 10000 |
| 16 | Vacuum explosion chamber contact permission attrition thickness | mm | 2 |

2. Combination electric appliance engineering parameter:

Model No.: FZRN21-12D/T125-31.5

| Item | Unit | Data |
|---|------|-------|
| Rated voltage | KV | 12 |
| Rated frequency | Hz | 50 |
| Fuse max rated current | A | 125 |
| Rated breaking ac 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 |
| 1 min power frequency withstand voltage: (vacuum fracture, phase to phase, 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 |
| Fuse ram output energy | J | 2-5 |

12KV Vacuum Load Break Switch(FZN25 Series)



FZRN25-12D / T630-20 indoor AC high voltage load-breaking switch is three-phase AC 50Hz and rated voltage 12kV indoor installation, which is suitable for using in industry and mining situations, enterprise substations and transformer substations for protection and controlling the electrical facility, by using OFF and ON load current, closed loop current, idling transformers and cable charging current. It has manual and electrical motor operating mechanism that is advantageous to realize three remote controls requirement of



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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 installation, which is suitable for load control and short-circuit protection. It is equipped with the earthing switch that may withstand short-circuit current. FZN25-12D / FZRN25-12D load switch and combination electric appliance is suitable for load control and to short-circuit the protection, in three-phase ring net, the terminal power supply urban districts, power distribution stations and the industry consumers. The combined electric appliance has more reliable economical protection functions than circuit breaker electrical appliance equipment, especially for the ring net, double radiation power supply unit and box type transformer substation.

Load switch main technical parameter:

| Item | | Data | |
|--|---|---|----------------------|
| | | FZN25-12D/T630-20 | FZRN25-12D/T125-31.5 |
| Rated voltage | kV | 12 | |
| Rated frequency | Hz | 50 | |
| Rated current | A | 630 | 125 |
| Rated insulation level | 1 min power frequency withstand voltage | kV | |
| | Explosion chamber fracture 30; | | |
| | To earth, phase to phase 42; Isolation fracture 48; | | |
| | Lightning impulse withstand voltage(peak value) | kV | |
| | | To earth, phase to phase 75; Isolation fracture 85; | |
| Rated dynamic current (peak value) | kA | 50 | |
| 4 seconds heat-stable current | kA | 20 | |
| The rated active load breaking current | A | 630 | |
| Rated closed loop breaking current | A | 630 | |
| Rated cable charge breaking current | A | 10 | |
| Rated breaking idling transformer capacity | kVA | 1600 | |
| Rated transfer current | A | | 2000 |
| Fuse model | | | SDLAJ-12 SFLAJ-12 |
| Ram output energy | J | | 2-5(middle grade) |
| Rated short-circuit making electric current | KA | 50 | |
| Earthing switch rated peak withstand current | KA | 50 | |
| Earthing switch 2s thermal stable current | KA | 20 | |
| Auxiliary loop retard voltage | | 220 110 | |
| Mechanical life | | 10000 | |

12KV Load Break Switch(FKN12 Series)



Summary

FKN12-12D/630-50 indoor AC high voltage load break switch, rated voltage is 12KV, rated frequency is 50Hz. It is a kind of three phases high voltage switch equipment. It can be used to breaking- closing load current, closed current, charge current for no-load transformer and cable, closing short-circuit current. The Load break switch which assembled earthing switch can sustain short-circuit current.

FKRN12-12D/100-31.5 indoor AC high voltage load break switch-fuse combination electrical appliance is a combined indoor high voltage switch equipment which combined by FKN12-12D load break switch and S□LAJ-12(XRNT□-12)high voltage limiting current fuse. This appliance can open any current up to short circuit current; Load break switch open working current, Fuse open short circuit current, combination open any current from working current to short circuit current, meantime Fuse makes the Load break switch opening through striking.

Sphere of application

FKN12-12D Load break switch, FKRN12-12D Combination electrical appliance mainly used in three phases ring-operated network, city terminal power supply station and industry electrical equipment working for load operation and short circuit protection. Since the combination electrical appliance is better than Circuit breaker in protecting tranformer and some other electrical appliance, especially in ring-operated network and box type transformer substaion.

Normal working condition

Air temperature: +40℃ ~ -25℃;

Altitude: No more than 1000mm;

Relative humidity: average of one day no more than 95%, average of one month no more than 90%;

Surrounding air can't be polluted by corresive or combustive air and water vapour;

Have no severe shake.

Polluting resisting class: II class;

If the using condition exceed the above, please consult with the manufacturer.



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| Number | Item | Unit | Data | |
|--------|---|------|--|-----------------------------------|
| | | | Fn12-12d/630 | Fn12-12(R)D/125 |
| 1 | Rated voltage | kv | 12 | |
| 2 | Rated frequency | Hz | 50 | |
| 3 | Rated current | A | 630 | 100 |
| 4 | 1 min power frequency withstand voltage | kv | Earthing to earthing and between phase 75, isolation fracture 85 | |
| 5 | Light implus withstand voltage | kv | Earthing to earthing and between phase 42, isolation fracture 48 | |
| 6 | Rated thermal stable current | kA | 20(4s) | |
| 7 | Rated peak withstand stably current | kA | 50 | |
| 8 | Rated making current(peak) | kA | 50 | 50 |
| 9 | Rated breaking current (expected value) | kv | | 31.5 |
| 10 | Critical breaking current max $I^2 \cdot T$ | Hz | | As per fuse characteristics curve |
| 11 | Min breaking current | A | | As per fuse characteristics curve |
| 12 | Rated shift current | kv | | 1.5 |
| 13 | Breaking current | kA | 1.8 | |
| 14 | Breaking off-load transformer capacity | kVA | 1250 | |
| 15 | Rated cable charging current | A | 10 | |
| 16 | Rated active load current breaking times | Time | 10000 | |
| 17 | Ram touched load switch off time | S | | <0.06 |
| 18 | Earth switch thermal stable current | kA | | 20(2s) |
| 19 | Earth switch thermal stable current (peak) | kA | 50 | 50 |
| 20 | Motor operation supply voltage | V | AC&DC 110、220 | |

12KV Load Break Switch(FN5 Series)



Summary

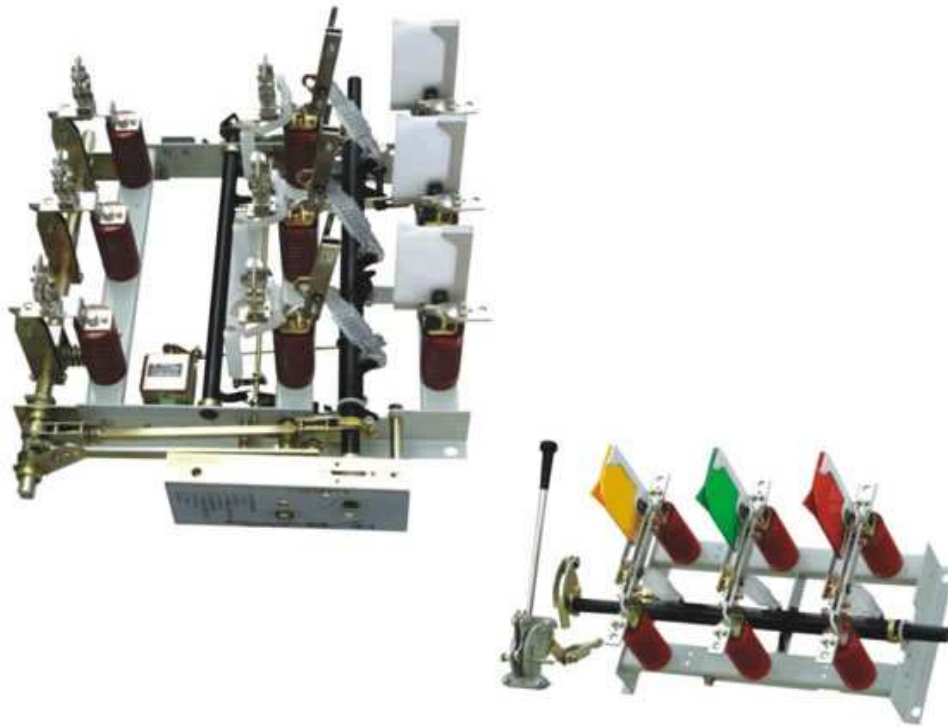
The FN5-12R(L) type Indoor AC H.V. load switch and fuse box is designed by ourselves, combined with the requirement of our country and based on the advanced foreign technique. It has been tested for long term by full aspects and confirmed to IEC420 "AC H.V. load switch-fuse box"(1990 version) and GB3804 "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) type Indoor AC H.V. load switch and fuse box 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 out the load current, overload current and the breaking current. It is equipped with CS6-1 type manual operating system.

12KV Load Break Switch(FN7 Series)



Summary

The AC H.V load switch FN7-12DR is a new type gas using indoor hv load switch, adapt to 3 phases AC electrical power system with the frequency 50HZ and rated voltage 12KV. Used to breaking out the load current and cutting the short current.

The H.V load switch with fuse combined electrical apparatus FN7-12DR added lateral operating system based on the FN7-12 Series, make the installation more flexible, meet different requirements of the customers.

Main specification

| Sort | Type | DS Earthing on coil in nterface | DX Earthing on coil out interface | L Interlock device | R Fuse | R Striking fuse | F Electromotion break-brake device |
|-----------------------------|--------------|---|---|--------------------------|-----------|-----------------------|---|
| Without release | FN7-12 | | | | | | |
| | FN7-12DSL | * | | * | | | |
| | FN7-12DXL | | * | * | | | |
| | FN7-12R | | | | * | | |
| | FN7-12DSL R | * | | * | * | | |
| | FN7-12DXLR | | * | * | * | | |
| With striking release | FN7-12RAF | | | | | * | * |
| | FN7-12SLRAF | * | | * | | * | * |
| | FN7-12DXLRAF | | * | * | | * | * |



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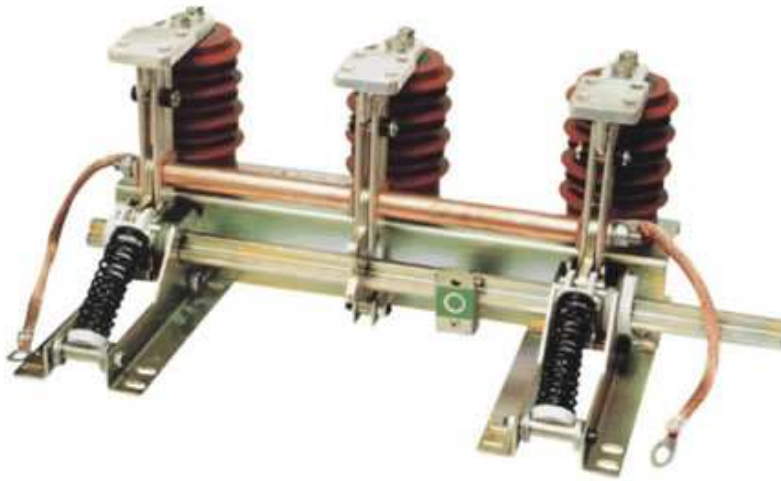
Rated Parameters

| Rated voltage (kV) | Maximum Voltage (kV) | Rated current (A) | 1min power frequency withstand voltage (kV) | 4S thermostable current (virtual value) (kA) | Dynamic stability current (peak value) (kA) | Short circuit open and close current (kA) | Rated open and 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 |

Fuse Rated Parameter

| Type | Rated voltage (kV) | Rated current (A) | Fuse link 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 |

12KV Earth Switch (JN15 Series)



The indoors high voltage earthing switch JN15-12 series is in accordance with BG 1985 “AC high voltage isolator and earthing switch” and IEC60129, it suits for 12KV/40.5KV and lower voltage. It can be matched to many kinds of high voltage switchgear in AC 50 Hz electrical power system, used for earthing protection.

It's an integral type earthing switch, composed by base, Supporting insulator, static contact, moving contact, main axle, fast spring and so on. Besides , it can be used together with an Electrified display device, if user needs.

The Character of this product.

1. advanced design, reliable technical performance
2. simple structure, conveniently to install and debug.
3. Analysis and synthesis quickly, has the ability of
4. Artistic Contour and excellent production process
5. Meet demand and can be operated both sides.

Using Environment condition

1. The elevation is less than 1000m
2. the air temperature around: Upper limit40 °C lower limit-25°C
3. Earthquake intensity no more than 8°C.
4. has no flammable explosive dust, chemical etching and Fierce vibrated place.