

HEAG[®]



FLW34-12 / 24 / 40.5

Outdoor AV High Voltage SF₆ Load Break Switch

GENERAL AND APPLICATION

FLW34 series pole mounted load break switch is used for breaking and making rated current, overload current of power distribution system of rated voltage 6kV to 40.5kV, and rated frequency 50/60Hz. It could separate automatically sections of power distribution which faults occur. The switch has manual, motor, remote operation modes. Electronic controller installed inside stainless enclosure, so the switch can be used in variant climate conditions. Besides that, the wire/wireless modem installed inside control box could achieve remote monitoring and controlling. It's easy and convenient for installing the switch on pole, and reduces relative commissioning cost. Such type load break switch also can be combined with relay controller to act as sectionalizer of power distribution system, coordinating with upstream load break switch controller to isolating and detecting temporarily or permanently faults on distribution, increase the power supply efficiency in smart grid system.

The product mainly accords with the following standards:

| | |
|---------------------------------|--|
| <i>IEC62271-103</i> | <i>High-voltage switchgear and controlgear - Part 103: Switches for rated voltages above 1 kV up to and including 52 kV,</i> |
| <i>(IEC60265 old version)</i> | <i>3.6kV~40.5kV High Voltage AC Load Break Switch</i> |
| <i>& GB/T3804-2004</i> | |
| <i>IEC60694 & GB/T11022</i> | <i>Common specifications for high-voltage switchgear and controlgear standards</i> |
| <i>IEC62271-1</i> | <i>High-voltage switchgear and controlgear - part 1: Common specifications</i> |

PRODUCT FEATURES

◆ SF₆ gas insulation

SF₆ gas is nontoxic, incombustible, electrical insulating gas, it is with excellent arc extinguishing characteristic.

◆ Bushing diversity

In addition to the standard epoxy casing, can also choose ceramic casing.

◆ Visible breaking/closing status

It's easy to see the indicator which marked with color in main contact position from ground (green-opening; red-closing). The indicator would connect directly with drive shaft of main contacts to make sure of showing contact status exactly.

◆ Quick operation

Adopt spring energy storage type operation mechanism to make sure of quick opening and closing operation (less than 100ms).

◆ Achieve local or remote control

Equip with electronic controller, which can achieve local operation, or use the FTU/RTU interface to achieve master control operation.

◆ Durable switch

The switch is made of high quality 304 stainless steel materials which is proven durable,

corrosion resistant and is painted on the surface to ensure a long service life (30 years) and carry out a series of operations, with ideal characteristics of pole-mounted switches.

NORMAL SERVICE CONDITIONS

- ◆ Ambient temperature: Max. temperature: 55°C, Min. temperature: -40°C, Max. daily temperature difference is 25°C
- ◆ Altitude: ≤3000m
- ◆ The level of air pollution according to IEC/TS60815-1(idt. GB/T26218.1): VI class
- ◆ Icing thickness: 10mm
- ◆ Snowing thickness: 35mm
- ◆ Intensity of sunshine: 0.1W/cm²
- ◆ Average thunderstorms yearly: 40 days
- ◆ Maximum wind speed: 35m/s(from the ground 10m high, 10 minutes maximum mean wind speed)
- ◆ Relative humidity: Daily average ≤95%; Monthly average ≤90%
- ◆ Earthquake resistant capability: 8 Degree (ground horizontal acceleration 0.25 g, vertical acceleration 0.125 g.)
- ◆ The installation site should be a place free of flammable, explosive, chemically corrosive, and frequently violently vibrated

MAIN TECHNICAL PARAMETERS

| No. | Item | | Unit | Data | | |
|-----|---|---------------------------|-------|--------------------------------|---------------|---------------|
| 1 | Rated voltage | | kV | 12 | 24 | 40.5 |
| 2 | Rated insulation level | Power frequency | kV | 42/48 | 65/79 | 95/118 |
| | | Wet withstand voltage | | 34/49 | 52/79 | 85 |
| | | Impulse withstand voltage | | 78/85*95/105 | 125/145 | 185/215 |
| 3 | Rated current | | A | 200, 400, 630 | | |
| 4 | Rated active load breaking current | | | 200, 400, 630 | | |
| 5 | Rated frequency | | Hz | 50/60 | | |
| 6 | Rated loop breaking current | | A | 200, 400, 630 | | |
| 7 | 5% rated active load breaking current | | | 31.5 | 31.5 | 43.3 |
| 8 | Rated cable charging current | | | 10 | 10 | 25 |
| 9 | Rated short circuit making current (peak) | | kA | 50 | 50 | 50 |
| 10 | Rated short-time withstand current (4s) | | | 20 | 20 | 20 |
| 11 | Rated peak withstand current | | | 50 | | |
| 12 | Rated operating voltage (controller) | | V | AC110/220 | | |
| 13 | Rated voltage of auxiliary loop | | | DC24/48/110/220 | | |
| 14 | Mechanical life | | Times | 6,000/10,000 | | |
| 15 | Rated SF6 pressure (25°C) | | Mpa | 0.1/0.12 | 0.1/0.12 | 0.15/0.25 |
| 16 | Rated SF6 yearly gas leakage rate | | | <0.1 & 0.5% | | |
| 17 | Operating method | | | Spring operated (manual/motor) | | |
| 18 | Outline dimension (W×D×H) | | mm | 1060*950*545 | 1370*1040*545 | 1656*1326*545 |
| 19 | Weight | | kg | 100 | 115 | 155 |

*Remarks:

- a. Special design 12kV high altitude application, also apply for 13.8/15.5kV system, impulse withstand voltage tested as 95/105kV according to relative IEC standard, isolating gap can reach 110kV; Electrical life can achieve E3 class and mechanical life can reach 10,000 times, if special requirements, please consulting with manufacturer.
- b. Terminal can be Porcelain(Ceramic) or polymer material bushing or can be designed as insulated cable with requested length according to request.

OUTSIDE STRUCTURES



Fig.1) Outgoing line of ceramic bushing



Fig.2) Outgoing line of silicone rubber bushing



Fig.3) Outgoing line of silicone rubber bushing (anchor)



Fig.4) Both sides combined with Power VTs and LAs

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