

Short Circuit And Earth Fault Indicator Specifications

EKL4C

Short circuit and earth fault indicator type EKL4C, have signal remote transmission function. Its in the digestion absorption based on similar advanced products at home and abroad, for urban and rural power grid ring network distribution system design of a special automatic monitoring device. In a Ring network power distribution system, especially in the extensive use of Ring net load switch (Ring Main Unit) system, if happened to the next level in the distribution network system short circuit or ground fault, at the next higher level power supply system must be specified in between the breaker, in order to prevent major accidents. In the breaker protection, belonging to the level of network system all the power. Through the use of this product, can rapidly and accurately indicate the faulty parts, greatly save the look up part of the time, reduce the outage time and power scope, improve power supply reliability.

Working principle:

When the power supply circuit has a short circuit or ground fault occurs, the short circuit current in ground or produce electromagnetic field changes, fixed in cable sensors on the measuring coil produce pulse signal, when the value of the pulse signal reach or exceed the size of the set of fault the current value, fault indicator automatically memory fault state, fault indicator lights flashing issued instructions, at the same time by long range alarm interface, and the fault signal transmitted to the monitoring center, the staff through fault indicator signal can promptly and accurately to line fault location, timely troubleshooting, restore power supply.

Main function:

1. Short circuit fault alarm indication: Short-circuit fault sensor installed on single phase cable, monitoring the current changes of the power supply line in time, when the current change value reach or exceed short circuit current action when the alarm set point (this value can be setting according to user requirements befor producing), the short circuit fault sensor emit alarm signal, the signal through optical fiber sent to the indicator host, the corresponding fault indicator light flashing, send out alarm indicator.

2. Grounding fault alarm indication: Ground fault sensors installed on the bifurcation unshielded part of three-phase cable, detection of three-phase cable of zero

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sequence current value, when its value reach or exceed the earth current action when the alarm set point (this value can be setting according to user requirements on the panel), the ground fault sensor emit alarm signal to the indicator host, the ground fault indicator light flashing, send out alarm indicator.

3. Battery low battery alarm indication: when the indicator host internal battery voltage drops to 2.5V, generate alarm signal, to mention maintenance personnel change the battery, the alarm signal lasts about two months. Furthermore it equipped with an external power supply interface, it's can use an external power source by AC/DC5-10V.

4. Remote alarm and reset: After the short circuit or ground fault occurred, indicator sends the corresponding alarm signal at same time, cooperate with the distribution network automation (FTU) devices, and fault alarm signal can be transmitted to remote monitoring center, can also do remote manual reset operation.

5. Automatic reset: When the indicator emit alarm signals, in a set of automatic reset time, without manual reset, the indicator can be automatically reset.

6. Test and reset: When the indicator emit the alarm signals, press the indicator host “reset/test” button on the panel, can clear alarm status. In the normal state, hold down the indicator host “reset/test” button on the panel for 3 senconds, panel on all the lights flashing 10 times, also have relais working sound, this means the indicator is in normal working.

Installation Method

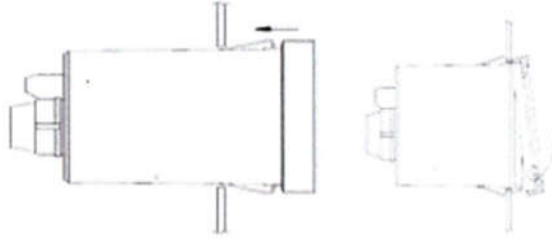
1. The indicator host installation:

Indicator host installed on the front panel of power distribution cabinet, push the indicator host into the slot from the cutting hole on the front panel of power distribution cabinet.(as the following picture 1.2)

Remove the indicator host must press the metal shrapnel on the indicator host. Pull the inferoanterior frame of indicator host slightly and take it off, bring out the front panel of indicator host.(as the following picture 1.3)

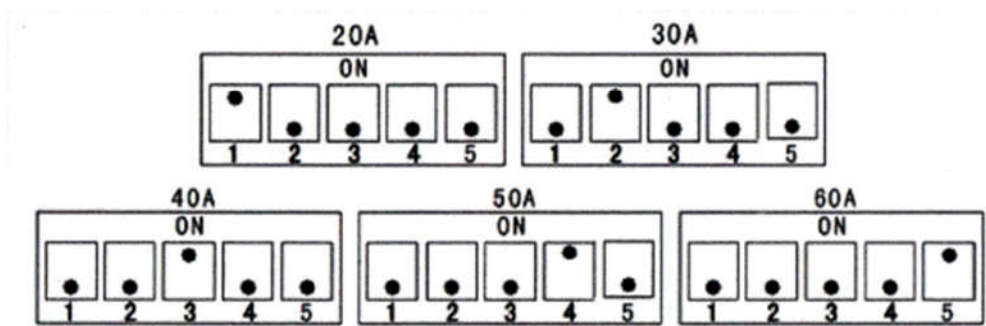
Hole size: 91.5 mm (tolerance: ± 0.3 mm) x 43 mm (tolerance: ± 0.3 mm)

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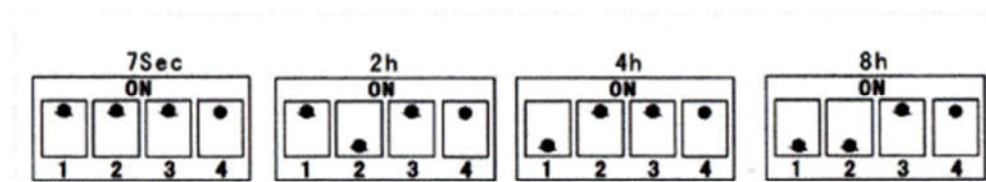


1.1 Indicator Host Panel 1.2 Push the host into the cutting hole 1.3 pull the host out

Open the host panel can setting earth fault warning current (as following picture 1.4) and setting automatic rest time (as following picture 1.5)



1.4 setting earth fault warning current

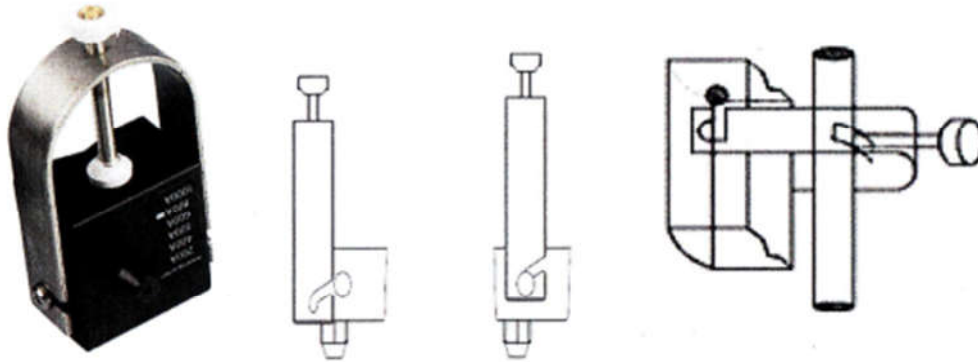


1.5 setting automatic rest time

2. The short circuit fault sensor installation:

Unscrew the fastening screw of the U-type iron out of iron-core groove, mounted the short circuit fault sensor on the cable, adjust U-type iron slightly to insert its oblique bottom into iron-core groove fully, screw the fastening screw until the sensor fixed tight on the cable.(as the following picture 2.2-2.3).

The short circuit sensor should be mounted on the phase-line cable of power circular distribution. Fix the fastening screw tight and insert optical fiber into the bottom of connector to prevent sensor sliding and causing cable loosening, shedding or fracture.

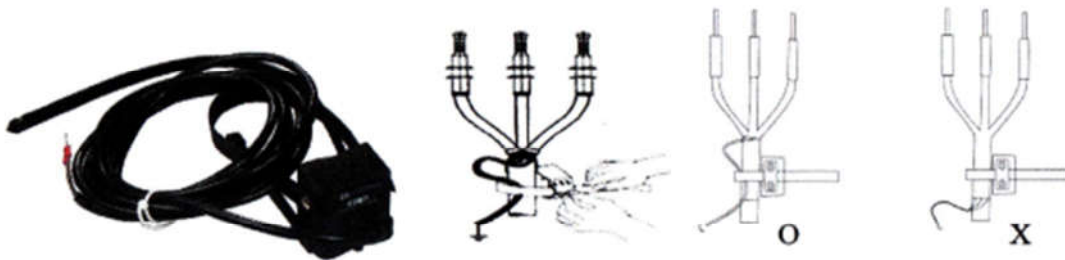


2.1 Short circuit fault sensor 2.2 U-iron outof/into iron-core 2.3 Sensor mounted on cable

3. The Ground fault sensor installation:

Loosen the screw of the magnetic strap, adjust strap position to let it cross the testing bifurcation unshielded part of three-phase cable, fasten the screw and tighten the strap of the ground fault indicator until the sensor fixed tight on the three-phase cable.(as the following picture 3.2-3.3).

The earth shielding cable on the top of earth fault sensor must cross earth fault sensor and then connect with earth line.



3.1 Ground fault sensor 3.2 Ground fault sensor mounted on cable 3.3 The earth line must unshielded

4. Signal optical fiber connection:

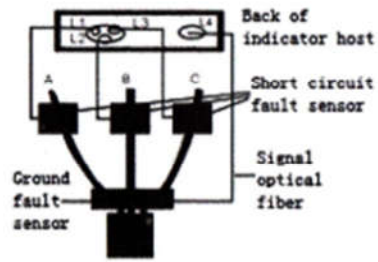
Loosen the nut on the optical fiber socket of the sensor, plug one side of optical fiber into fiber socket hole until the optical fiber arrive the bottom, fasten the nut until the optical fiber fixed can not move; Another side of optical fiber connect with indicator host in the same installation method.(as the following picture 4.2).

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The sensor must connect tighten with indicator host, to prevent loosening and sedding or fracture, in order to make sure the indicator is in normal working.



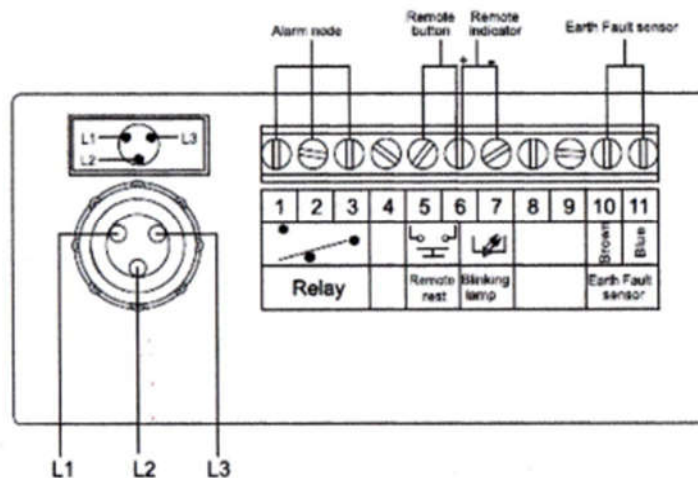
4.1 Back of Type C



4.2 Optical fiber connecting position

Note: On the both ends of the optical fiber section have be special processed, installers can not cut short at random, otherwise influence the normal operation of indicator !

5. Remote signal connection:



5.1 Type C wiring diagram

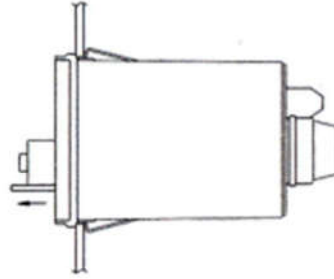
6. Battery changing:

Unscrew the nut on the panel of indicator host, bring out the battery change a new battery (anode outward), screw down the nut. (as the following picture 6.1-6.2).

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6.1 Unscrew the nut on the panel of indicator host



6.2 Change the battery

Main technical parameters:

Short circuit warning current: 200-1500A selectable (accuracy: $\pm 10\%$) Delay 20-30ms when ordering can be selected by the user (the default factory setting: 800A.20ms).

Ground fault warning current: 5-50A selectable (accuracy: $\pm 10\%$) Delay 20-300ms when ordering can be selected by the user (the default factory setting: 20A.20ms).

Short circuit sensor mounted cable diameter: Outside diameter $\leq \Phi 40$ mm (other specifications shall be customized).

Ground fault sensor mounted cable diameter: Outside diameter $\leq \Phi 120$ mm (other specifications shall be customized).

Working Ambient Temperature: -40°C - 75°C .

Relative Humidity: $\leq 95\%$ RH without water, Acid and salt fog.

Working power supply: Lithium batteries or AC/DC (5V-10V) $\pm 15\%$.

Remote Signal Contact capacity: AC220V/1A.

Remote Signal contact reset method: Manual reset/Auto reset.

Automatic reset time: 1-48H selectable (accuracy: $\pm 5\%$) when ordering can be selected by the user (the default factory settings: 12H).

Indicator host boundary dimension: 97x48x79 mm.

Indicator host installing hole size: 91.5mm x 43mm (tolerance: ± 0.3 mm).

Sensor optical fiber length: 3m (3 pieces) (other specifications shall be customized).

Suitable for medium voltage below 35 kV rating system.

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Standard configuration:

Indicator host.....1 piece
Short circuit fault sensor.....3 piece
Ground fault sensor.....1 piece
Sensor optical fiber.....3 piece

Attention:

- 1. The indicator host must be installed outside the high voltage area.**
- 2. Indicator optical fiber connection between the host and sensor installation must tighten. To prevent the optical fiber loosening, shedding or fracture, in order to make sure the indicator is in normal working.**