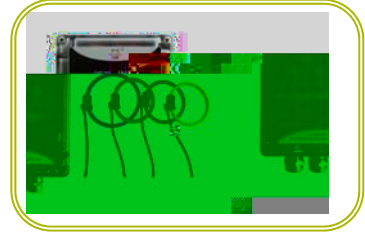
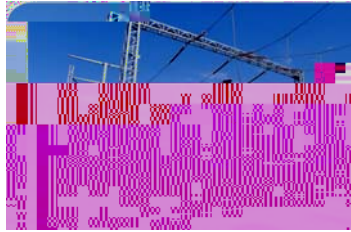




DFE-HH-C Catalogue

Underground Cable Fault Indicator



For Reliable, Secure and Economical Energy System Operation

Dongfang Electronics International Engineering Co., Ltd.
Dongfang Electronics Co., Ltd.

1. General Description

The DFE-HH-C underground indicator is used in 5~38kV cable line (underground) power distribution networks to monitor and locate short circuit and earth fault. The red LED in display unit will blink when short circuit and earth fault happens. The fault information will also be sent to SCADA system by external connection with IP Modem or RTU/FRTU. DFE-HH-C underground fault indicator consists of:

1 PCS Display Unit: Wall-mounted with LED indication

1 PCS Sensor: Earth-fault detection, cable connection

3 PCS Sensor: Short circuit detection, cable connection



2. Features

Fault Indication:	<p>Indication of Earth-Fault by Ultra-bright blinking red LED.</p> <p>Indication of transient and permanent short-circuit by ultra-bright blinking red LEDs, L1, L2, and L3.</p> <p>Indication of Low Battery alarm by ultra-bright blinking yellow LED.</p>
I/O Interfaces:	<p>1 x DI for SCADA RESET, support 9-38VDC voltage input range.</p> <p>2 x DO, 2 relays output connect to SCADA, one is for short-circuit and earth-fault alarm (NO), another is for Low battery alarm (NO or NC is selectable by Jumper inside).</p> <p>1 x external LED lamp interface for Earth-Fault indication.</p> <p>1 x manual push-button for test/reset function.</p>
Communication Interfaces:	<p>Protocol: MODBUS RTU</p> <p>Serial Interface: RS485, Baud rate 9600, 8-N-1</p> <p>Default address: 1</p>
Dual Power Supply:	Support external 5-36VDC power supply.

	Support internal 3.6VDC replaceable lithium battery.
Multiple Reset Method:	Timer reset; Push Button reset; AC 220-240V reset; SCADA Reset (DI); Communication Reset (MODBUS).
Dual Manual Push-button Test Mode:	Short press (1 sec); Long press (3 sec).
Flexible Parameter Setting Method:	By DIP switch OR By MODBUS.
Current Sensor:	CT adopts flexible Rogowski coil.
IP Protection:	IP54 degree of protection for Display Unit. IP68 degree of protection for current sensor (CT).

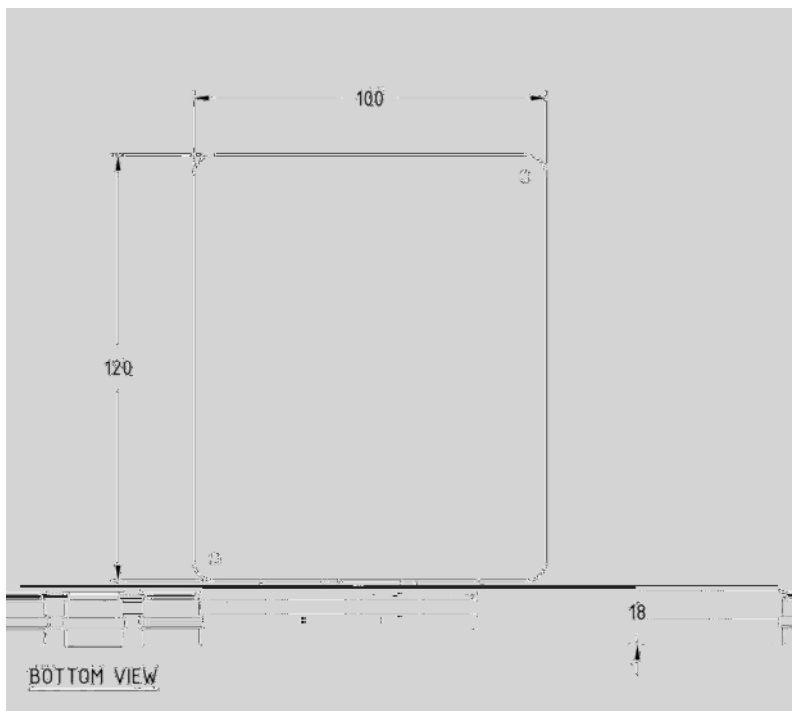
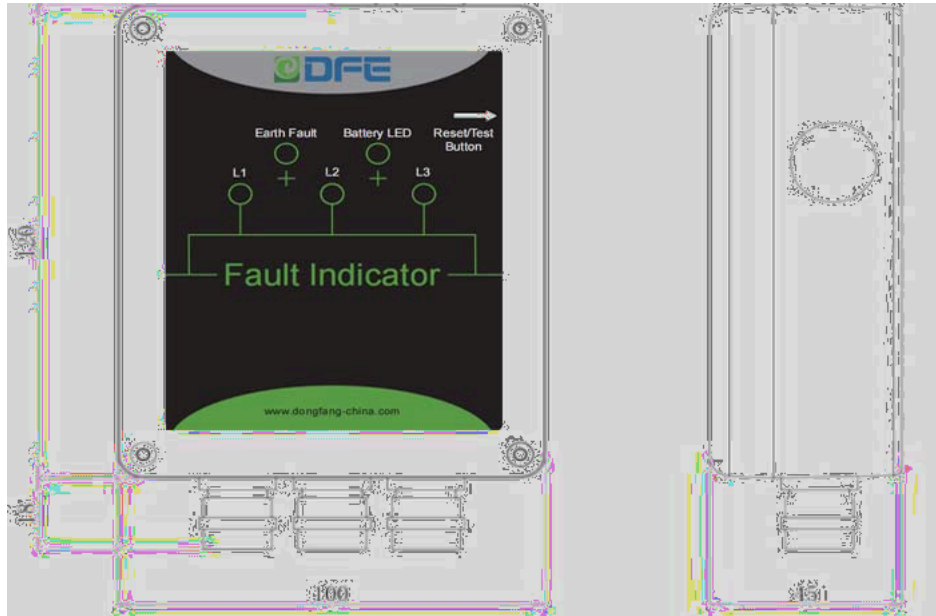
3. Specifications

Model	Standard version includes 1*Display unit, 1*Earth fault CT and 3*Short circuit CTs; CT adopts flexible Rogowski coil, (short circuit CT: d=80mm, Earth fault CT: d=110mm, Cable length 6m/10m/16m optional, can be customized according to requirements.) Cable default: 10m
Electrical Parameters	Applicable Voltage Level: 5~38KV Applicable Current Level: 0 I 630A Current Measurement Accuracy: $\pm 3\%$ 100A; $\pm 5\%$ > 100A Maximum Earth Fault Current: 1000A Maximum Short Circuit Current: 2000A Fault Current Accuracy: $\pm 5\%$ Short-Time Withstand Current: 31.5kA/2s Short Circuit Trip Current (Phase to Phase): 200A/600A/800A/1000A, default 200A; adjustable by DIP switch or MODBUS(50-2000A settable, 1A step), support customization. Short Circuit Response Delay Time: 40ms/80ms/100ms/200ms, default 50ms, adjustable by DIP switch or MODBUS(20-60000ms settable, 1ms step), support customization. Earth-fault Trip Current (Phase to Ground): 40A/80A/120A/160A, default 40A; adjustable by DIP switch or MODBUS(20-1000A settable, 1A step), support customization. Earth-fault Response Delay Time: 40ms/80ms/100ms/200ms,

DFE-HH-C Underground Fault Indicator Catalogue

	default 50ms, adjustable by DIP switch or MODBUS(20-60000ms settable, 1ms step), support customization.
Power Supply	Internal Battery:3.6V/2.7Ah lithium battery(replaceable), battery service life about 8 years. External Power Source: 5-36V DC (Optional)
Interface	Serial Port: 1* RS485 Data bits: 8; Stop bits: 1; Parity: none; Baud Rate: 9600 bits/s I/O Interface: 1*DI: 9-38V DC input 2*DO: Maximum switching voltage 250VAC/30VDC Maximum switching current 5A 1*External LED lamp interface AC Input: 1*AC220-240V voltage recovery interface Power interface for 10-36VDC input Backup power (battery) switch, switch the power supply of the device
Reset	Timing Reset: 12h, 24h, 48h, adjustable by DIP switch Button Reset: Manual by push-button for 1s DI Reset: By 9-38V DC wide voltage input Load Current Reset(when load current >10A), reset for permanent short circuit only AC Voltage Reset: By AC220-240V recovery MODBUS Reset: By communication
Protection Level	Display Unit IP54 Sensor (CT) IP68
Environmental Limits	Environment Temperature: -35°C to +70°C Relative Humidity: 95%RH Altitude: 2000m

4. Display Unit Dimension (Unit: mm)

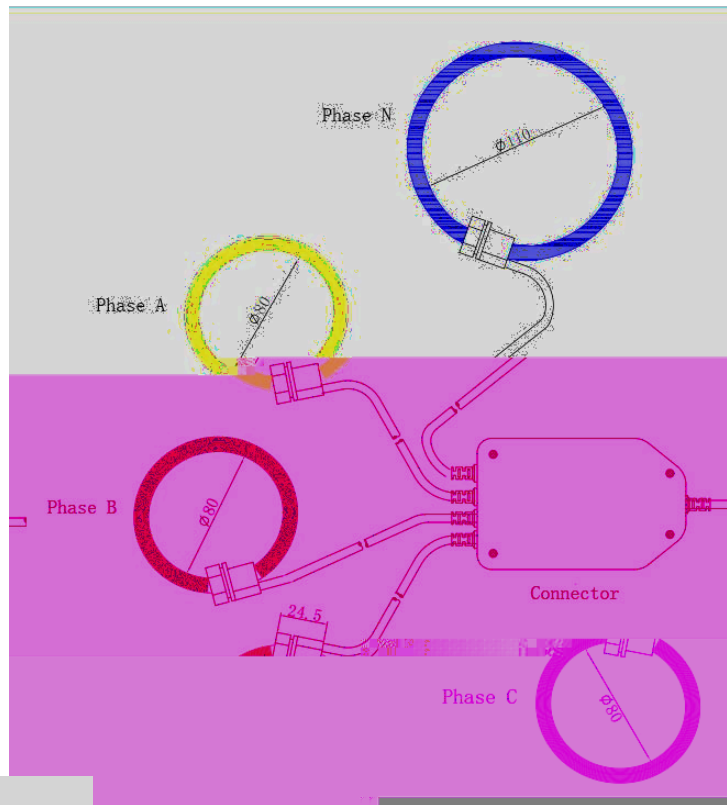
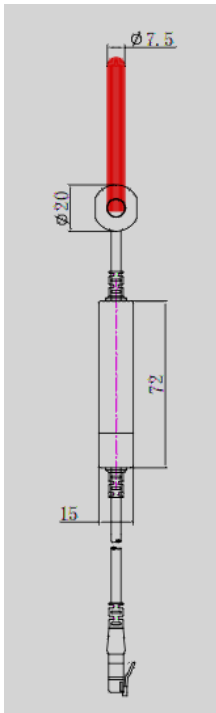


5. CT Dimension

Short circuit CT: $d=80\text{mm}$

Earth fault CT: $d=110\text{mm}$

Cable length 6m/10m/16m optional, can be customized according to requirements.



Unit: mm

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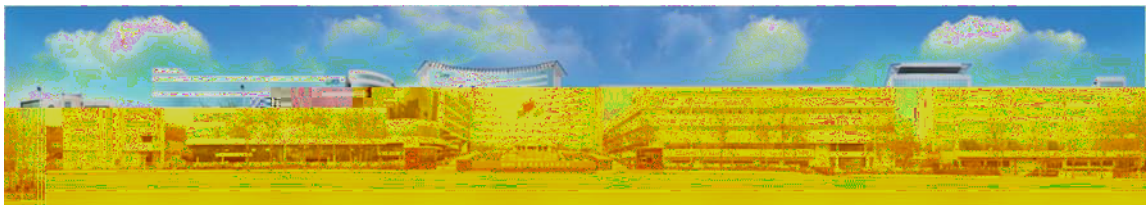
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