



ZDT-300 DC Earth Fault Locator

The DC system is an important part of electrical power installations, any earth faults can affect the operation of vital components, such as the system protection, circuit breakers and communication equipment. Therefore, its correct operation is vital to the stability of the network.

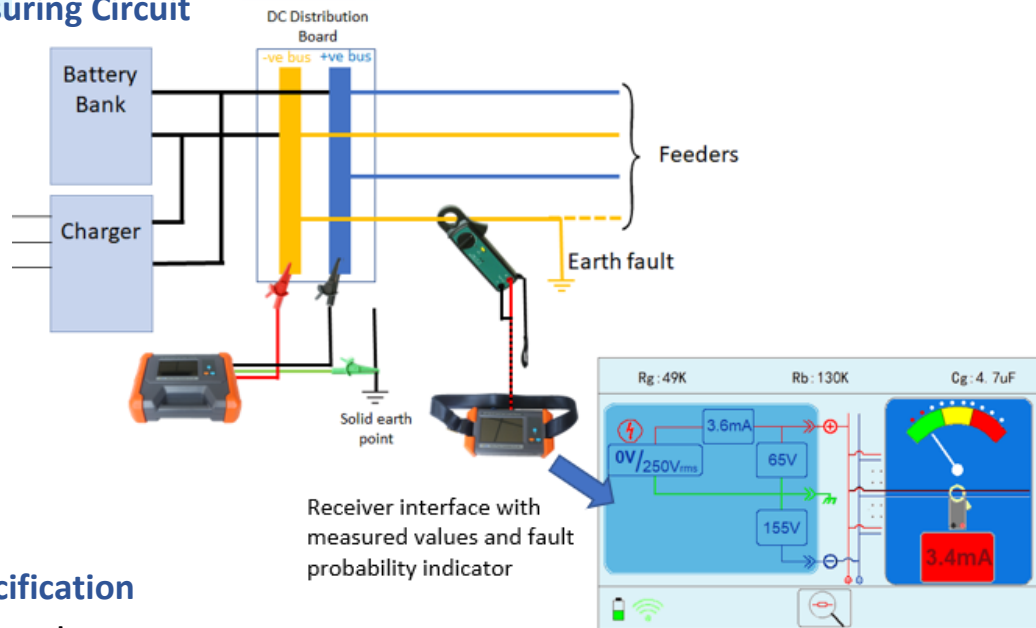
As the DC system is a floating unearthed system, an earth fault on one terminal will not prevent the system from working normally. However, should an earth fault occur simultaneously on the other terminal, it will result in a virtual short-circuit between them through the earth, causing the failure of the DC supply.

The ZDT-300 DC Earth Fault Locator is used to quickly and accurately locate DC network earth faults on live systems. It consists of a signal transmitter, receiver and a choice of sensors for different cable sizes. Depending on the model chosen, the system is capable of detecting high resistance faults up to $1\text{M}\Omega$, allowing problems to be identified at an early stage, so that remedial action can be taken to prevent a subsequent failure.

Features

- Detection of DC network earth faults on a live system
- Automatic identification of positive and negative DC bus voltages
- Detection of AC interference on the battery system
- Measurement of fault resistance, capacitance to earth and balance resistance
- The transmitter power is taken directly from the system, an external supply. Is only required if the system voltage is too low.
- High sensitivity, up to $1\text{M}\Omega$ for 1000V version; $500\text{k}\Omega$ for 500V version; $250\text{k}\Omega$ for 2500V version
- Wireless communication technology provides real-time data transmission, between the transmitter and receiver, conveniently and quickly.
- Inductive sensor as an alternative to the clamp for large diameter cables

Measuring Circuit



Specification

➤ General

- Application to DC system voltage level: 24V, 48V, 110V, 220V. May be used on suitable auxiliary AC circuits if they are unpowered
- Maximum distributed capacitance value to earth: branch $\leq 47\mu\text{F}$, total $\leq 150\mu\text{F}$
- Earth resistance range: 0-1M Ω (depending on version selected)
- Ingress protection IP54
- Working conditions:
 - Temperature: -10°C to +50°C
 - Humidity: 5-90%RH
 - Altitude <4500m

➤ Transmitter:

- Output voltage: 1000V, 500V or 250V (depending on version selected)
- Output frequency: 0.1 - 0.5Hz (automatically determined)
- Power supply: DC (220V/110V taken directly from system under test) or AC 220V
- Dimension: 195mm×112mm×65mm, weight: 0.80kg

➤ Receiver:

- Power supply: 7.2V rechargeable lithium battery, up to 20 hours continuous operation
- Dimension: 195mm×112mm×45mm, weight: 0.55kg

➤ Clamp:

- Power supply: 2×AA battery, up to 20 hours continuous operation
- Dimension: 180mm×60mm×35mm; Weight: 0.21kg

➤ Current sensor (right):

- Replaces the current clamp for large diameter cables
- Connects directly to the receiver
- Dimension: 130mm×180mm×30mm; Weight: 0.20kg



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