

## T-C310 Cable Fault Locator

Connecting the instrument and pressing a button, you can get the distance to fault. The T-C310 pulse echo cable fault locator, an highly intelligent instrument, makes the dream of every cable maintenance people come true. Utilizing the latest microelectronics and digital signal processing techniques, T-C310 has internal gain control and impedance balancing capability, and can automatically calculate distance to fault. It is an ideal fault location and integrity testing instrument for telecom and control cables.

T-C310 applies pulses simultaneously to the line and balance outputs and displays the differential between resulting two signals. A switch allows the balance output to be applied to either a second (healthy) or an internal balance circuit simulating wave impedance of the cable tested. The **direct mode** of operation uses internal balance that will cancel the outgoing pulse in displayed trace to make fault reflection easily recognizable. The **differential mode** provides significant reduction in common distortion, an occurrence common with twisted cables, resulting in clean, easy to read traces. The T-C310 can hold a reference trace which can be displayed simultaneously with trace from the cable under test, thereby providing a **comparison mode** of operation which can be helpful in identifying the echo from high resistance or complex faults. For high resistance fault like poor insulation, T-C310 uses **bridge mode** to locate fault. We can regard the cable is composed by many resistors, if we can measure the value of resistance from the detecting point to fault point, use this value divided by cable length, we will get the distance to fault.

### Features

- While the automatic capability makes the fault test a much easier job, the manual operation interface provides an experienced operator more test flexibilities.

- Bi-polar pulse reduces attenuation and distortion of reflection of long distance fault, which significantly makes fault reflection to be recognized easier and increases accuracy.
- Comprehensive operation modes enable close up faults within few meters, to be located without the need to use interposing delay lines or coils of cable.
- Pulse velocity can be calibrated to any cable dielectric.
- While mainly designed for telephone cable with 8 kM range it can be easily modified to test longer distance cable.
- Using internal rechargeable battery with power save mode and power low indication, the instrument can continuously work for 5 hours without recharging.
- Up to 10 waveforms can be stored in internal no-volatile memory for later analysis or computer read out through RS-232 output.
- Support hardcopy of LCD screen image if it is connected to a PC.
- A PC software package provides powerful fault reflection traces analysis capability. The fault point can be discriminated even easier by comparing a fault cable reflection with the trace recorded when the cable was “good”.
- A big LCD screen gives much clearer waveform and message display.
- Immune to the effect if induced or impressed voltages on the cable under test.
- Portable and rugged design makes the unit easy to carry and withstand tough field environment.

## Specifications

### TDR Mode

Range: 8 Km, extendable to 32kM.

Resolution:  $\pm 1\text{m}$ , for range  $< 2000\text{m}$

$\pm 8\text{m}$ , for range  $\geq 2000\text{m}$

Output impedance:  $82\text{--}594\ \Omega$  adjustable

Pulse amplitude:  $30\text{V}$

Pulse width:  $80\ \text{ns}\text{--}10\ \mu\text{s}$  adjustable according to range

### **Bridge Mode**

Fault resistance range:  $0\text{--}30\ \text{M}\ \Omega$

Accuracy:  $\pm 1\% \times \text{cable length}$

Voltage:  $100\text{V}$

Measuring range:  $9999\text{m}$

### **Environmental**

Operating temperature:  $0^\circ\text{C}\text{--}+40^\circ\text{C}$

### **Physical**

Dimension:  $230\text{mm} \times 140\text{mm} \times 170\text{mm}$

Weight:  $3\ \text{Kg}$

