

RADIODETECTION – Application Note

FAULT LOCATION FOR THE CABLE MANUFACTURER

The extrusion processes carried out during the manufacture of a cable may cause one or more of the metallic elements to fracture, resulting in an unwanted open circuit within the cable. On the other hand, two of the conductors may actually be in contact or there may be a point of low insulation. The manufacturer at the end of the process could have a length of cable, (perhaps several kilometers long), containing a variety of faults.

The technique sometimes employed is successive halving of the cable to determine the area of the fault. This involves significant handling and inevitably results in short lengths of good cable rather than the desirable long lengths.

The Bicotest range of cable fault locators provides the capability of locating all types of faults quickly and easily with the minimum of operator training.

The Bicotest T625 cable fault locator is ideal for locating open circuit conductors in very long lengths of cable. With 15 stages of amplification available, it is capable of locating an open circuit in cables up to 20 km long.

The T625 has the same performance when locating a short circuit in long lengths of cable. The length of cable which can be examined using the T625 is dependent upon the cross-sectional area of the conductors and the insulation material. High quality communication cable will present no difficulty to the T625 in locating faults at long range.

Insulation faults which occur during the manufacturing processes are of two kinds:

- 1) Those with an insulation resistance of less than 300 ohms
- 2) Those with an insulation resistance of greater than 300 ohms

The first type can be located easily with the T625 but the second type cannot as insufficient reflection will be obtained from the fault. This type of fault can, however, be easily located using a T272 High Resistance Fault Locator. This instrument is an inverted bridge which is capable of locating faults up to 200 Megohms in any type of cable. This unit is unaffected by the insulation material of the cable or the cross sectional area of the conductor.

Equipped with a T625 and a T272, every insulation fault or conductor fault within the cable can be quickly and easily located, giving the benefit of fast fault location and minimal scrap through cable faults.

