

cable shield splice continuity tester

T124

Features

- Ease of operation
- Accuracy

Applications

- Check cable splices without opening each splice
- Detect faults that visual inspection may miss
- Check integrity of ground connection
- Check condition of capacitors across insulated splices

Description

Wilcom Model **T124 Cable Shield Splice Continuity Tester** is an accurate measuring device which provides measurement of the conditions existing at cable shield splices, checks the integrity of ground connection, and checks the condition of capacitors across insulated splices. Two probes, capacitively coupled to the shield of the cable under test, are connected to very high-input impedance amplifiers contained in the probe assemblies. The outputs of the two amplifiers are fed through a cable to a balanced transformer circuit in a measuring set. The measuring set is connected to any stable ground.

When the two probes are placed on the same section of cable, the two signals generate a very low level reading on the measuring set; this reading is taken as a reference. The probes are then placed across a splice. If the shield splice is good, the two probes pick up the same signal level, and the reading on the measuring set equals the reference previously



measured. If the splice bonding is defective, a higher reading is observed on the meter. The difference between the reference reading and the reading across the splice is an indication of the nature of the fault.

A key switch is provided to permit measurement of the voltage to ground picked up by each probe. The two voltages should be equal if the splice is good, and different if the splice is defective. This feature makes the set useful for identifying the nature of a variety of faults in splices, and also for checking ground connections.

A clamp is attached to the back of the measuring set to permit attachment to a 1 1/4" diameter pole (lay-up stick). If a lay-up stick is used, one person can apply the probes to the cable from the ground and also take the readings on the set.

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General

Cable shield continuity is essential in order to provide adequate shielding and protection on telephone cables. A breakdown in shield continuity may be the result of defective bonds between sections of cable that are spliced together. This can contribute to a significant increase in noise on telephone circuits, particularly in areas of high power influence. A wide variety of fault conditions can exist on a cable, and any one fault or the cumulative effect of multiple faults may be responsible for excessive noise. It is therefore important that all faults be located and corrected to assure that noise is kept to a minimum and to provide maximum protection.

Model T124 provides the means to detect defective shield splices and poor ground connections. It is now possible to quickly check all splices on a cable without the laborious operation of opening each splice or damaging the cable insulation. Visual inspection of splices may not reveal a fault, as many conditions can be detected only by completely disassembling the bonding assembly and making accurate measurements across each splice.

On all cable shields there are 60 cycle harmonics. When a good shield splice exists between two sections of cable, the voltages on both sides

of the splice are the same. However, if there is a defective bond, the voltage will be different on each side of the splice. The extent of this difference usually is an indication of the nature of the defect. Model T124 is designed to detect this difference.

Some of the faults detected are as follows:

1. Completely open bonds
2. High resistance bonds
3. Intermittent bonds
4. Improper or defective ground connections
5. Defective capacitors across insulated splices

A variety of conditions may cause any of these faults to occur. These faults could go undetected using only visual inspection. Measuring techniques available with Model T124 make it possible to determine these faults. High resistance and open bond resulting from corroded bonding surfaces are typical examples of faults that are difficult to detect. Visual inspection does not reveal these defects unless the bonding arrangement is completely disassembled, but an accurate measurement of the difference across the splice will immediately reveal the condition.

The **T124 Cable Shield Splice Continuity Tester** includes the following:

1. Two probes mounted on short sections of fiberglass tubing which may be hand held where there is ready access to the cable splice to be tested. The probes are mounted on pivots so they can be positioned to the sag of the cable. A multi-conductor cable from each probe is connected to a common connector which mates with a connector on the measuring set or an extension cable.
2. A 4-foot section of fiberglass tubing serves as a crossbar for mounting the probes. The two probes are fastened to the crossbar with adjustable clamps so that the spacing between the probes can be adjusted to accommodate a variety of splice closure sizes. A 1 1/4" diameter lay-up stick (not included) can be attached to the crossbar to provide a means for applying the probes to the cable from the ground.
3. A measuring set with a measurement range of +13 dbv to -55 dbv with a switch to permit measurements between the two probes or from each probe to ground.
4. A 25-foot stranded copper ground cable.
5. A 25-foot multi-conductor extension cable.

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