



### New 4910G open and split fault locator

The 4910G is designed to provide direct distance readings to both opens and splits. An open is a discontinuity in one or both of the wires of a cable pair. Opens can be the result of bad splices as well as the result of damage caused by shotgun pellets, squirrels, gophers or shovels. A split is a splicing error in which one side of a pair is inadvertently cross-connected with one side of a second pair while the remaining sides are spliced correctly. The split is the only cable fault that is virtually always man-made. The 4910G operates on a capacitance charge sampling principle which relates the charge placed on a length of wire to its capacitance and hence its length. A built-in microprocessor performs automatically the measurements and calculations necessary to locate opens and splits. The test set averages out the effect of noise on the line by automatically taking several readings on the pair prior to displaying the fault distance on its autoranging digital display. The 4910G is set automatically for standard .083mf/mile exchange cable but can be reset to other types of cable by means of the D Factor control. 50 Hz noise rejection and metric options are available.

### Tone type fault locators

The tone type locator, such as the Model 4904A, places a pulsed tone on the faulted circuit which is traced by an inductive pick-up coil and a sensitive tuned receiver. At the point of the fault, the signal drops in level, thereby pinpointing the exact physical location of the fault. The tone locator also has the advantage of being able to precisely trace the path of the cable and, by triangulation, determine its depth at any point. This information is necessary for use in accurately locating the fault. It is also necessary for accurately marking the cable location to protect it from construction and excavation work being performed in the vicinity of the cable. The tone locator system is designed so that only the transmitted signal is detected, and interfering signals (such as power line harmonics) do not interfere with the measurement. Output power of the transmitter is kept low to prevent interference with other working circuits in the cable and to prevent "carry-by" of the signal beyond the fault.

### 4904A cable fault locator

The 4904A is a pulsed tone system for locating shorts, crosses and grounds in direct buried, underground (ducted) and aerial utilities

cable. It also accurately locates path and depth of buried cables and pipes. The sensitive narrow bandwidth receiver rejects ac hum and permits locating high resistance faults. It produces a pulsed 990 Hz tone for buried cable fault locating and a pulsed 150 Hz tone for aerial cable. The tone transmitter unit also has a built-in ohmmeter for analyzing faults. The accessory earth contact frame is especially useful for locating high resistance pinhole faults in the cable sheathing. It comes complete with transmitter, receiver, search wand, earth contact frame, cables and ground rod.

### Ultrasonic leak detection

As pressurized gas escapes through an aperture, it creates considerable noise in the ultrasonic region of 36 to 44 kHz. The HP Ultrasonic Translator Detectors (such as Model 4905A) detect this characteristic sound with a sensitive, directional Barium Titanate microphone and translates the signal to audio by mixing it with a 40 kHz local oscillator signal. The audio signal is then amplified and monitored on a speaker and level meter.

The most common causes of pressure leaks in cable plant are corrosion (particularly in coastal areas), electrolysis, squirrels, boring beetles, abrasion (during installation) and corrosion are the most frequent causes of cable sheath trouble in cable installed underground in ducted passages.

To detect leaks in aerial cables, the craftsman merely scans the cable from the ground with the flashlight-size microphone, listening for the characteristic hissing sounds of a leak. By simultaneously observing the level meter, he can "peak in" on the leak and determine its exact location. Pole mounted accessories are available for closer scanning of the cable and the 18043A Ultrasonic Reflector accessory is a parabolic type dish allowing exact aerial leak locating from ground level.

Leaks in ducted underground systems are located with a unique "Duct Probe" accessory.

### 4905A ultrasonic translator detector

The 4905A is a lightweight, portable ultrasonic detector which includes a directional probe, a 6-ft. coil cord and a leather utility case. It has a self-contained speaker, a logging meter, and provision for headphones.