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Find the *Polar Toneohm 550* at our website: ***Click HERE***

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TONEOHM 550

PRECISION SHORTS LOCATOR



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GENERAL DESCRIPTION

The 550 TONEOHM is a precision milliohmeter with a unique resistance-dependent, variable-frequency audio tone output. The 550 is ideally suited for electronic manufacturing and service industries as a short circuit and fault-finding aid. The highly sensitive variable-frequency audio tone output makes it ideal for locating the physical location of short circuits on PC boards and within system wiring. In many cases, shorts may be located to within 0.2 inches of the actual fault location, without the need to disconnect associated components or wiring.

Frequency resolution of the audio tone is accurately dependent on the resistance between two hand-held Kelvin probes. If the probes are placed on two tracks of a PC board and a tone is heard, the tone indicates there is a short circuit between the two tracks. By moving one of the probes along its track until the tone reaches its highest pitch, the precise location of a short can be found.

The highly accurate 550 allows the TONEOHM to be used for other varied applications including continuity testing, relay and switch contact measurements, detection and measurement of high-resistance connections, measurement of transformer winding resistance, and the determination of partial shorts between windings.

The low probe tip injection voltage (60mV max., 5mV typ.) prevents possible damage to sensitive semiconductor devices within the circuit under test. Kelvin probes, in combination with DC injection, avoids measurement errors which could result from parallel capacitors or lead loss.

USE ON UNPOWERED BOARDS ONLY

SYSTEM OPERATION

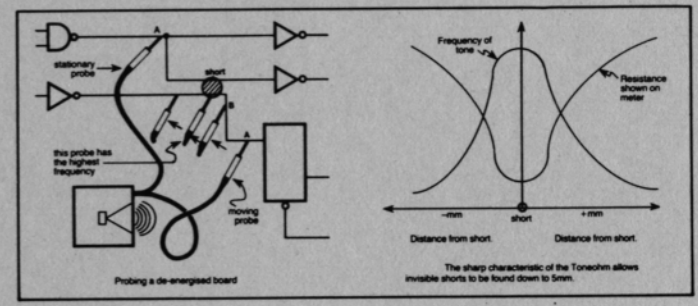
To Adjust Instrument Viewing Angle

1. Grip handle arms near the pivot points and pull outwards.
2. Swivel the case to the required bench viewing angle and release the outward pressure on the arms. The case will now latch at that position.

Short Circuit Location Measurements

1. Switch the 550 "ON" and rotate the VOLUME control fully clockwise (CW).
2. Select the desired sensitivity by pushing the RANGE switch to one of the positions. In most cases, the 200 milliohm range will be appropriate for locating short circuits.
3. Locate the two suspected "shorted" tracks and place a probe on each track. Refer to points "A" and "A" in Figure 1. A tone should be heard. If not, reduce sensitivity until a tone is heard (i.e., select a higher resistance scale with the RANGE control). If no tone can be detected, this is an indication the two selected tracks are not shorted.
4. If a tone is heard, move one of the probes to a new location on its track (point "B" in Figure 1). An increasing tone frequency indicates you are moving the probe toward the short location. Likewise, a decreasing tone frequency indicates you are moving the probe away from the short.
5. Continue moving the probe in a direction that produces a higher frequency tone. Increase sensitivity as required (i.e., select a lower resistance scale on the RANGE control). When you have reached a point where a maximum tone frequency (and a minimum meter reading) is observed, you should be within a few millimeters of the actual physical short condition. Visual inspection can now be used to actually locate and correct the short condition. In many cases, you may find it more convenient to initially locate the short by using the tone, and then use the meter for a final resolution.

FIGURE 1.



SPECIFICATIONS

- o 4 RANGES ..... 200 mΩ, 2Ω, 20Ω, 200Ω
- o ACCURACY ..... ±5%
- o MAXIMUM PROBE VOLTAGE ..... 60mV (open circuit)
- o PROBE PROTECTION ..... Automatic current limit to ±30 V
- o DISPLAY ..... 3½ digit liquid crystal display
- o POWER ..... 120V, 220/240V 50/60 Hz at 12 VA (approx.)
- o WEIGHT ..... 2.6 pounds (approx.)
- o DIMENSIONS ..... 3.3 ins. x 9.9 ins. x 10.3 ins.

Note

If you require a Service Manual contact Polar Instruments or your local distributor.

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