

MILLER 400A

ANALOG RESISTANCE METER



DESCRIPTION

When combined with appropriate electrodes (pins) and test leads, the MILLER-400A can be used to measure earth resistance or the resistance-to-earth of a buried electrode, such as a ground rod or an anode, for example.

Depending on the application, 4-Electrode, 3-Electrode or 2-Electrode, the MILLER-400A can be used to determine the following:

1. The average earth resistivity to a specific depth [with the application of an appropriate multiplier to convert resistance to resistivity, based on the electrode separation distance] – 4-Electrode Application.
2. The resistivity of a soil sample, or of a liquid, via an electrolyte [soil/liquid] box [with the application of an appropriate multiplier to convert resistance to resistivity, depending on the box geometry] – 4-Electrode Application.
3. The resistance-to-earth of a buried electrode, such as a ground rod, or an anode, for example – 3-Electrode Application.
4. The resistance between two buried electrodes, such as two ground rods, or two anodes – 2-Electrode Application.

FEATURES

The current source in the MILLER-400A, which supplies current between the C1 and C2 terminals [with a load applied], is a 12V[rms] crystal controlled 97Hz square wave oscillator and the voltmeter inside the unit, which senses the potential difference [voltage drop] appearing across the P1 and P2 terminals, employs a very narrow band-pass filter centered at 97Hz. What this means is that resistance measurements taken by the MILLER-400A are unaffected by any stray interference signals [having frequencies other than 97Hz] that may be present in the earth during a measurement.

• Resistance Measurement Range

The MILLER-400A has a resistance measurement range from 0.010 Ω [0.01 \circ] to 1.1 M Ω [1.1M \circ] that is achieved by means of a set of 8 range settings and a system of internal “standard” resistors. External resistances [resistance values under test] are compared against the internal “standards, via a null balancing system, resulting in a determination of the external.

The MILLER-400A runs on a set of replaceable C-size alkaline batteries, so there is no requirement to periodically re-charge the unit or to plug the unit into a power source.