

Operating Principle

The resistance of windings is measured by passing DC current through the unknown resistance, and measuring the resulting voltage drop. The DO8000 calculates the resistance by the formula $R = E/I$.

Winding resistance challenges

Measuring small resistance in a highly inductive environment can be a challenging task. The voltage across an inductor is defined by the formula $V = L di/dt$. Some power transformers have inductance (L) of over 1000 henrys, therefore minute changes in current will result in undesirable voltage swings that can make it impossible to measure the DC resistance of the transformer windings. The Cropico DO8000 addresses this challenge in several ways so that the instrument is able to achieve stable resistance readings on the largest of transformers in record time.

- The DO8000 uses a powerful, highly regulated and filtered constant current source to drive current through the windings.
- The DO8000 uses a 30 volt source, which is sufficient to drive the core into saturation where small changes in current have no effect on the measured resistance.
- By connecting primary and secondary in series, speed of saturation is increased because there are more Amp turns contributing to the flux in the core. The resistance measurement of both windings are made at the same time, on channels A & B.

DO8000 SPECIFICATIONS

Measurement

4 wire eliminates lead resistance

Display

LCD Graphics colour LCD display visible in bright sunshine

Ranges

Manual/Automatic independently selectable for each measuring channel

Terminals

4 mm safety sockets

Working Temperature

-10°C to +50°C

Storage Temperature

-15°C to +80°C

Relative Humidity

0 to 90% non condensing

Mains Supply

90 to 132Vac 50/60Hz, 198 to 256Vac 50/60Hz 550VA max

Safety

EN 61010 EN 61326

Dimensions

470mm x 360mm x 180mm (W H D) approx

Mass

11.4kg approx

Protection

Protected from overvoltage transients & substation noise, high speed current interrupt detector, audible warning during and after test, emergency stop button

Memory

Over 100 files with over 120 measurements each in text files that are compatible with most spreadsheet formats

Systems Interface

RS232 and USB ports

CODE ▾

ITEM ▾

DO8000 OPTIONS

CR-001

Shipping crate

LS03-8000

Lead set with 3 metre leads terminated in large Kelvin clips type KC3

LS04-8000

Lead set with 3 metre and 15 metre lead length terminated in large Kelvin clips type KC3