

In-Circuit Capacitor/ Inductor Analyzer

LC103



In today's high performance circuits, value, leakage, dielectric absorption and ESR are important indicators of a capacitor's ability to perform properly in-circuit. Inductors too, must be of the proper value and quality. Unless all of these parameters are thoroughly analyzed, problem capacitors and inductors may be missed and troubleshooting becomes a guessing game. The Sencore LC103 take the guesswork out of capacitor and inductor testing. It provides in-circuit capacitor value and ESR tests along with automatic out-of-circuit test for capacitor value, leakage, ESR and dielectric absorption. Inductors are automatically analyzed in-circuit for value or out-of-circuit for value and quality with patented tests.

The LC103 is a complete, automatic, microprocessor-controlled capacitor and inductor analyzer. It's features make it ideally suited for both single component analyzing in service or maintenance work, or for large volume, both testing in a lab or incoming inspection.

KEY FEATURES

- Pinpoints bad capacitors and inductors "in-circuit", and automatically tells you when further out-of-circuit tests are required
- Analyzes capacitors for all four failures out-of-circuit:
 - Value from 1 pF to 20F
 - Equivalent series resistance
 - Leakage with up to 1,000 volts applied
 - Dielectric absorption
- Tests SMT components in-circuit and accurately with exclusive, time-saving test accessories
- Analyzes inductors with exclusive, patented tests for:
 - Value from .1uH to 20 H
 - Opens or shorts
 - Even one shorted turn with patented "Ringer" test
- Makes all tests, compares the results to EIA standards, and tells you "GOOD" or "BAD" – automatically
- Tests SCRs and triacs with optional SCR250 accessory

APPLICATIONS

- Electronic Repair for in or out of circuit analysis of capacitors and inductors
- Test and analyze high voltage capacitors used in broadcast transmitters
- Troubleshoot IGBT's in electric motors and other industrial applications
- Verify and analyze critical components in power generation facilities

SPECIFICATIONS

In-Circuit Capacitor/Inductor Analyzer LC103

IN-CIRCUIT TESTS (Capacitors and Inductors)

Dynamic in-circuit tests to determine whether the component is good or bad.

COMPONENT TYPES

Electrolytic, double layer lytic, tantalum, ceramic, and other capacitors. Yokes, fly backs, switching transformers, and coils.

RANGE

Inductors: 3.18 uH to 3.18 H
Capacitors: 0.002 uF to 20,000 uF

ACCURACY

Same as out-of-circuit tests for known good inductors and capacitors with no parallel current paths.

SUGGEST REMOVAL INDICATION

Initiated when AC test differs from DC test by more than 20%, or if low level DCR test indicates a leakage path greater than 20% of charge current for capacitors

CAPACITORS (Out-of-circuit)

Value: Dynamic test of capacity value is determined by applying a constant current to the capacitor and measuring the dV/dt
Accuracy: ±1%; ±1 pF; ±1 digit for values to 1990 uF; ±5%; ±0.1% of range full scale for values 2000 uF to 20 F.

EQUIVALENT SERIES RESISTANCE (ESR)

Accuracy: ±5%; ±1 digit
Capacitor Range: 0.01 uF to 20 F

DIELECTRIC ABSORPTION

Accuracy: ±5% of reading ±1 count
Range: 1 to 100%
Capacitor Range: 0.01 uF to 20 F

LEAKAGE

Accuracy: ±5%, ±1 digit.
Applied Voltage: keyboard entry 1.0 to 1000 volts in .1 volt steps short circuit current limited to 900 mA

INDUCTORS (Out-of-Circuit)

Value: A dynamic test of value determined by measuring the EMF produced when a charging current is applied to the coil under test.
Current Rates: Automatically selected

RINGING TEST

A dynamic test of inductor quality determined by applying an exciting pulse to the inductor and counting the number of cycles the inductor rings before reaching a preset damping point.

Inductor Range: 10 uH and larger, non-iron core
Accuracy: ±1 count on readings between 8 and 13
Rings Resolution: ±1 count
Exciting Pulse: 5 volts peak

GENERAL

Temperature: Operating range: 32° to 104° F (0° to 40° C) range for specified accuracy (after 10 minute warm-up): 50° to 86° F (10° to 30° C)
Power: 105-130V AC, 60Hz, 30 watts with supplied PA251 power adapter. Battery operation with optional BY289 rechargeable battery.
Auto Off: Removes power during battery operation if unit sits idle longer than 5 minutes.
Battery Life: 2 hours typical operation.
Size: 6" x 9" x 11.5" (15.2 cm x 22.9 cm x 29.1 cm)
H/W/D & Weight: 6.0 lbs. (2.7 kg) without battery, 7.6 lbs. (3.4 kg) with battery.
Good/Bad Indication: Functions on all tests. Requires user input of component type and value, or input of desired limits