All-in-One Digital Multimeter LCR-Reader-MPA with Coil Test Attachment is Available in USA, Canada and China

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Canadian Siborg Systems Inc starts offering of the All-in-One Digital Multimeter LCR-Reader-MPA with the Coil Test Attachment

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LCR-Reader-MPA from Siborg Systems Inc. is an All-in-One Digital Multimeter that offers quick, high accuracy testing for SMT with little or no set-up between measurements. The device has recently added another test option: a Ring Coil Test.

Ring Coil Tester Attachment for LCR-Reader-MPA Digital Multimeter

The LCR-Reader-MPA Digital Multimeter is a lightweight multimeter with 0.1% basic accuracy and a wide range of features including 100 kHz test signal, Oscilloscope mode, AC/DC current/voltage testing, pulse/signal/duty testing. The MPA can automatically determine the type of component and test parameters; this is exceptionally helpful when testing unlabeled components.

Siborg Expands capabilities of the popular All-in-One Digital Multimeter LCR-Reader-MPA by adding Ring Coil Test Attachment

All measured values: the main impedance value, secondary values (e.g. ESR), component type, and test frequency are available promptly on the LCD display.

The main difficulty for testing coils if that the LCR-meter shows almost no change in the impedance value if there is a short turn in the coil. A known much more accurate method of finding short turns in a coil is by using the Ring Test technique. This method is well tested in repairing old-style audio-video equipment that employ flybacks, main transformers, motors, chopper transformers, deflection yoke windings, magnetic heads, and other coils, transformers or inductors.

The method is based on Gibbs phenomenon that is a response of the system to a step excitation. When a capacitor is connected across the investigated coil and a pulse is applied to the parallel circuit, the waveform across the resonant circuit will create a decaying oscillation, with at least a few cycles if the coil is good. The oscillations will be strongly damped and only complete 1-2 cycles if there is a shorted turn in any of the magnetically coupled coils of the device. A short turn can also be applied, if possible, to compare the behavior with and without the short turn; if there is no change, there must be a shorted turn in at least one coil. Experience and comparison with a known good device will tell you what to expect.

In order to use the Ring Coil Tester it should be connected to LCR-Reader-MPA Digital Multimeter through the micro-USB port on the device and connected to the investigated coil by the hook connectors. The MPA device must be set to “Winding Turns” in the menu. When set, the screen will show the excitation response on the display. The figures show the difference between testing a working coil (left) and one with a short turn around the coil (right). The example shows the dramatic difference of the display; when a shorted turn is connected, the display shows a significantly higher dissipation factor and therefore a fewer number of oscillations following the impulse on the coil.

Currently the new Ring Coil Tester Attachment is only available directly from Siborg our from its distributor in China AI-Rox in Shenzhen.

LCR-Reader-MPA was introduced in 2019 as a more accurate and versatile option to the Smart Tweezers and LCR-Reader multimeters. The MPA offers more features than any LCR-Reader or Smart Tweezers device, including the aforementioned oscilloscope mode, which hasn't been included on any of Siborg’s devices after Smart Tweezers ST-1.

Recently, Siborg has begun offering a Bluetooth enabled LCR-Reader-MPA model. The Bluetooth model connects to a PC and Android devices to remotely record measurement data and control measurement from the computer.

MPA Features:

Test Frequency including 100, 120 Hz, 1, 10, 20, 30, 40, 50, 60, 75 and 100 kHz
0.1% basic accuracy
Oscilloscope mode
Fully automatic and manual LCR, ESR, Diode/LED testing
Easy Open/Short calibration and offset removal
Signal generator up to 100 kHz
Large and Super Large capacitance testing to 1,000 mF
Test signal levels of 0.1, 0.5 and 1 Vrms
Automatic Test Signal Reduction to 0.1V for in-circuit measurements
3.2 Volt LED test voltage
Signal Generator with Sine wave up to 100 kHz
1 oz. weight
Li-Poly battery with micro-USB charging
Gold-plated test leads
NIST Traceable Calibration certificate available

The LCR-Reader Store offers a wide range of test equipment, accessories and task kits. Siborg’s task kits are pre-bundled with a device and accessories;for example, the LCR-Reader-MPA task kit includes the Kelvin Probe

Connector which can be used to make LCR-Reader, MPA and Smart Tweezers devices into a probe-station. Siborg also offers their devices on Amazon sales places in North America and Europe.