

LC53/CA55 FIELD CALIBRATOR

OPERATING INSTRUCTIONS

SENCORE

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Form 3138
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Description

The FC221 Field Calibrator provides a set of low-drift coils and capacitors to test the calibration accuracy of the Sencore LC53 "Z Meter" Capacitor/Inductor Analyzer or the CA55 Capacitor Analyzer. The FC221 provides a convenient way to check the operation and calibration of these instruments in the field. For example, you can return your FC221 for recalibration, and then use it to check your LC53 or CA55. If your LC53 or CA55 tests within tolerance, there is no reason to return it for recalibration.

NOTE: The low-drift components used in the FC221 provide a general test of the calibration accuracy of the LC53 or CA55, but don't eliminate the need for high accuracy standard capacitors and inductors when recalibrating for maximum accuracy. The calibration of the FC221 needs to be tested at least once a year to maintain its published specifications.

Specifications

Operating temperature range: 65 to 75° F (18 to 24° C).

Approximate Value*	Accuracy**
8 mH	0.75%
560 uH	0.75%
50 uH	0.75%
5600 pF	0.75%
0.47 uF	0.75%
700 uF	1.5%

*The actual value is marked on the FC221 panel by direct comparison to Sencore's prime standards.

**Valid for LC53 or CA55 tests only—values may read differently with an AC-type (impedance bridge) test.

Calibration interval: One year maximum.

Size: 4½" × 3¾" × 1½" (11.43 × 9.53 × 3.81 cm.) Weight: 3.5 oz. (98 g)

Instructions

WARNING: Do not check the 700 uF capacitor for leakage at a voltage greater than 6 volts, as permanent damage to the capacitor will result.

The FC221 values have been selected to test all of the internal calibration adjustments of the LC53 or CA55 (except for the top 3 inductance ranges, which require extremely expensive components for even general tests). If an FC221 value reads within tolerance (as explained below), it shows that all of the internal calibration controls affecting that range are within tolerance. If a value reads outside the tolerance, one or more of the internal controls require recalibration.

NOTE: The FC221 does not provide all of the values needed to completely recalibrate the LC53 or CA55. It does, however, test most of the internal calibration controls, since a control for a low range also affects the accuracy of higher ranges. A calibration error, however, requires additional standard component values for correct recalibration.

Be sure you include the combined tolerance of the FC221 and of the LC53 or CA55 when evaluating the results. For example, any reading between 0.459 and 0.480 would be within tolerance for a marked value of 0.470 uF. This includes the 0.75% tolerance of the FC221 and the 1%, +/-2 count (on the third significant digit) reading of the LC53 or CA55. A reading outside this range indicates that the LC53 or CA55 (or the FC221) is out of tolerance.

Unless you've recently had your FC221 recalibrated, it's a good idea to always return it for recalibration any time you return your LC53 or CA55 for service or recalibration. This insures your Field Calibrator will be up to date when needed for field tests.