

Title: Calibration Of Metertech Digital Capacitance Meter

Scope

Work Instruction for the internal calibration of Metertech Digital Capacitance Meters. To be used in the absence of a manufacturers calibration instruction.

Preparation

Calibration must be carried out using Category A Master instruments as required.

Equipment required;-

- 1.1 Data Precision Digital Capacitance Meter.
- 1.2 Time Electronics Capacitance Box.
- 1.3 Electrolytic Capacitors Nominal Value 100 uf and 1000 uf.

Zero Adjustment - Carry out test 1 with the leads positioned approximately 2" apart. Note that the position of the leads affects the capacitance and the zero adjustment.

Method

- 2.1 All calibration results must be entered on the results sheets (see appendix A)
 - 2.2 Note the lab temp / relative humidity and enter on calibration results sheet.
 - 2.3 Carry out tests 2 to 7 using the capacitance box set to the appropriate decade values. Record the capacitance values using the data precision instrument and the U.U.T. and enter onto the results sheet.
 - 2.4 Carry out tests 8 and 9 using the appropriate electrolytic capacitors. Record the capacitor values on the data precision instrument and the U.U.T. and enter onto the results sheet.
 - 2.5 Complete the results sheet header and enter Pass / Fail.
- All records must be kept for audit purposes

References

Appendix A Calibration Results for Metertech Digital Capacitance Meter

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Appendix A

Calibration Results for Metertech Digital Capacitance Meter

Model Serial No

Date Result

Lab Temp / RH Operator

User Location Certificate No

Accuracies quoted are from the manufacturer's specification or relevant British Standard.

Test 1 Zero setting – Insert leads and switch on.
Adjust zero to compensate for leads
Does the UUT adjust to zero on 200 pf range? Pass / Fail

Test No	Range	Actual Reading	UUT Reading	Accuracy	Result
2	200 pf			$\pm 0.5\% \pm 1d$	Pass / Fail
3	2 nf			$\pm 0.5\% \pm 1d$	Pass / Fail
4	20 nf			$\pm 0.5\% \pm 1d$	Pass / Fail
5	200nf			$\pm 0.5\% \pm 1d$	Pass / Fail
6	2 uf			$\pm 0.5\% \pm 1d$	Pass / Fail
7	20 uf			$\pm 0.5\% \pm 1d$	Pass / Fail
8	200 uf			$\pm 1.0\% \pm 1d$	Pass / Fail
9	2000 uf			$\pm 1.0\% \pm 1d$	Pass / Fail

The UUT was calibrated using the following equipment:

1. Capacitance meter S/N
2. Capacitance box S/N

The uncertainty of measurement is estimated not to exceed:
Capacitance: $\pm 0.1\%$

The uncertainty limits quoted refer to the applied values only and do not relate to the stability of the UUT.