

Title: Calibration Of Levell TM3A / TM3B A.C. Microvoltmeter

Scope

Work Instruction for the internal calibration of Levell TM3A / TM3B A.C. Microvoltmeter. 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 Datron 9100 Calibrator.
- 1.2 50 ohm Load Resistor.
- 1.3 A.C. Divider.

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 1 to 3.
- 2.4 Carry out tests 4 to 21 using item 1.1.
- 2.5 Carry out tests 22 to 27 using items 1.1 and 1.3.
- 2.6 (TM3B only) Carry out test 28 using the Wide Band Option on item 1.1.
- 2.7 Complete the results sheet header and enter Pass / Fail.

- All records must be kept for audit purposes

References

Appendix A Calibration Results for Levell TM3A / TM3B A.C. Microvoltmeter

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Appendix A

Calibration Results for Levell TM3A / TM3B A.C. Microvoltmeter

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 Is the pointer on zero? Pass / Fail
Test 2 Does pointer remain within $\pm 1\%$ at 45° all planes? Pass / Fail
Test 3 Select battery test position on the range switch
Does the pointer indicate within the battery test marks? Pass / Fail

Calibration Accuracy: at $1\text{ kHz} \pm 1\%$ of reading $\pm 1\%$ of FSD $\pm 1\text{ uV}$
(TM3B only – set bandwidth at 1Hz to 3 MHz)

Test No	Range	Frequency	UUT Indication	Calibrator Indication	Allowed Limits	Result
4	500V	1 kHz	500V		490 to 510	Pass / Fail
5	500V	1 kHz	400V		391 to 409	Pass / Fail
6	500V	1 kHz	300V		292 to 308	Pass / Fail
7	500V	1 kHz	200V		193 to 207	Pass / Fail
8	500V	1 kHz	100V		94 to 106	Pass / Fail
9	150V	1 kHz	150V		147 to 153	Pass / Fail
10	150V	1 kHz	100V		97.5 to 102.5	Pass / Fail
11	150V	1 kHz	60V		57.9 to 62.1	Pass / Fail
12	150V	1 kHz	40V		38.1 to 41.9	Pass / Fail
13	150V	1 kHz	20V		18.3 to 21.7	Pass / Fail
14	50V	1 kHz	50V		49.0 to 51.0	Pass / Fail
15	15V	1 kHz	15V		14.7 to 15.3	Pass / Fail
16	5V	1 kHz	5V		4.9 to 5.1	Pass / Fail
17	1.5V	1 kHz	1.5V		1.47 to 1.53	Pass / Fail
18	500mV	1 kHz	500mV		490 to 510	Pass / Fail
19	150mV	1 kHz	150mV		147 to 153	Pass / Fail
20	50mV	1 kHz	50mV		49.0 to 51.0	Pass / Fail
21	15mV	1 kHz	15mV		14.7 to 15.3	Pass / Fail
22	5mV	1 kHz	5mV		4.90 to 5.10	Pass / Fail
23	1.5mV	1 kHz	1.5mV		1.47 to 1.53	Pass / Fail
24	500uV	1 kHz	500uV		489 to 511	Pass / Fail
25	150uV	1 kHz	150uV		146 to 154	Pass / Fail
26	50uV	1 kHz	50uV		48 to 52	Pass / Fail
27	15uV	1 kHz	15uV		13.7 to 16.3	Pass / Fail
28	1.5V	200kHz	1.5V		1.47 to 1.53	Pass / Fail
29	500mV	200kHz	500mV		490 to 510	Pass / Fail
30	150mV	200kHz	150mV		147 to 153	Pass / Fail
31	50mV	200kHz	50mV		49 to 51	Pass / Fail