

Title: Calibration Of Megger LT7 Digital Loop Tester

Scope

Work Instruction for the internal calibration of Megger LT7 Digital Loop Tester. 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 P-E Loop Test Resistor Bank.
- 1.2 Fluke DMM.

Method

2.1 All calibration results must be entered on Appendix A.

2.2 Enter the actual value of test resistors (from the resistor bank calibration sheet) and the allowed limits in the appropriate column of the results sheet. Test 2 to 8 are sockets A to G; tests 9 to 13 are sockets B, D, F, H, I. (Allowed limits to be: 2 decimal places 2 – 8; 0 decimal places 9 – 14, 2 decimal places 15 – 16).

2.3 Use UUT on 20 ohm range to measure the basic loop impedance and note reading.

2.4 Carry out tests 2 to 13, using UUTs dedicated mains lead, on sockets A to G (tests 2 to 8) and sockets B, D, F, H and I (tests 9 to 13). Note each result, subtracting the basic loop impedance for tests 2 to 8 and enter in results table observing the correct UUT decimal places.

2.5 Carry out test 14 using item 1.2 to measure the mains voltage.

2.6 Use the UUT to measure the total socket loop impedance of sockets A and B and calculate PSCC actual values based on the following formula:

$$\text{PSCC} = \frac{230}{\text{Socket Total Loop Impedance}}$$

Append these values in "actual value" column of the results table and enter the results of the PSCC tests in the appropriate column, observing the correct decimal places.

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 Megger LT7 Digital Loop Tester

Title: Calibration Of Megger LT7 Digital Loop Tester

Appendix A

Calibration Results for Megger LT7 Digital Loop Tester

ModelSerial No

DateResult

Lab Temp / RHOperator

User LocationCertificate No

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

Test 1 Do circuit condition indicators operate correctly? Pass / Fail

Calibration

UUT Accuracy: Resistance $\pm (2\% \text{ Rdg} + 3d)$; Voltage $\pm (2\% + 2d)$

Test No	UUT Range	UUT Indication	Actual Value	Allowed Limits	Result
2	20 ohm				Pass / Fail
3	20 ohm				Pass / Fail
4	20 ohm				Pass / Fail
5	20 ohm				Pass / Fail
6	20 ohm				Pass / Fail
7	20 ohm				Pass / Fail
8	20 ohm				Pass / Fail
9	200 ohm				Pass / Fail
10	200 ohm				Pass / Fail
11	200 ohm				Pass / Fail
12	200 ohm				Pass / Fail
13	200 ohm				Pass / Fail
14	Voltage AC				Pass / Fail
15	PSCC			None Stated	Pass / Fail
16	PSCC			None Stated	Pass / Fail

The UUT was calibrated using the following equipment:

1. P-E Loop Test Resistor Bank S/N
2. Fluke DMM S/N

The uncertainty in the applied values is estimated not to exceed:

Resistance: $\pm 0.8\%$
 Voltage: $\pm 0.61\%$

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