

## **Title: Calibration Of BM100 Series Insulation And Continuity Testers**

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### **Scope**

Work Instruction for the internal calibration of BM100 Series Insulation and Continuity 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 45° instrument balance stand.
- 1.2 Datron 9100 Calibrator.
- 1.3 Keithley DMM Model 136.
- 1.4 Megadek High Resistance Box.
- 1.5 J.J. instruments Decade Resistance Box.
- 1.6 1MΩ Resistor.
- 1.7 0.5MΩ Resistor.

### **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 test 2 using the 45° stand.
- 2.4 Carry out tests 3 to 7 using 1.2.
- 2.5 Carry out tests 8 or 9 as applicable using 1.3.
- 2.6 Carry out tests 10 to 15 using 1.4.
- 2.7 Carry out tests 16 to 33 using 1.5.
- 2.8 Complete the results sheet header and enter Pass / Fail.

- All records must be kept for audit purposes

### **References**

Appendix A Calibration Results for BM100 Series Insulation and Continuity Tester

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### Appendix A

#### Calibration Results for BM100 Series Insulation and Continuity Tester

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.

#### Movement check

**Test 1** Is the pointer on zero? Pass / Fail

**Test 2** Instrument Balance:  $\pm 1.9\text{mm}$  at  $45^\circ$  all planes Pass / Fail

#### Voltage Range: (BM100 only)

| Test No | UUT Indication Volts (50Hz) | Specified Accuracy $\pm 3\%$ FSD | Calibrator Voltage | Result      |
|---------|-----------------------------|----------------------------------|--------------------|-------------|
| 3       | 500                         | $\pm 15$ Volt                    |                    | Pass / Fail |
| 4       | 400                         | $\pm 15$ Volt                    |                    | Pass / Fail |
| 5       | 300                         | $\pm 15$ Volt                    |                    | Pass / Fail |
| 6       | 200                         | $\pm 15$ Volt                    |                    | Pass / Fail |
| 7       | 100                         | $\pm 15$ Volt                    |                    | Pass / Fail |

#### Insulation Range : DC Output Voltage

| Test No | Output Voltage | Specified Accuracy | Matching Test Resistor | Output Volts | Result      |
|---------|----------------|--------------------|------------------------|--------------|-------------|
| 8*      | 500            | $\pm 50\text{v}$   | 1 Mohm                 |              | Pass / Fail |
| 9*      | 250            | $\pm 25\text{v}$   | 500 kohm               |              | Pass / Fail |

#### Insulation Tests

| Test No | Resistor Value Mohms | Specified Accuracy | Result      |
|---------|----------------------|--------------------|-------------|
| 10      | INF                  | $\pm 1.9$ mm       | Pass / Fail |
| 11      | 100                  | $\pm 1.9$ mm       | Pass / Fail |
| 12      | 10                   | $\pm 1.9$ mm       | Pass / Fail |
| 13      | 1                    | $\pm 1.9$ mm       | Pass / Fail |
| 14      | 0.1                  | $\pm 1.9$ mm       | Pass / Fail |
| 15      | 0                    | $\pm 1.9$ mm       | Pass / Fail |