

## **Title: Calibration Of GTRM/Carillion 25kv Overhead Live Line Tester**

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**Scope** Work Instruction for the internal calibration of a GTRM/Carillion Rail 25kV Overhead Live Line Tester.

### **Preparation**

Calibration must be carried out using the HV test enclosure and its associated instruments and equipment.

Voltage readings must be taken referenced to the HV test enclosure digital kV meter (30kV AC range).

Current readings (for impedance calculation) must be taken using a Digital Multimeter 3020B on the 2mA AC range.

### **Method**

- 2.1 All calibration results must be entered on the results sheets (see appendix A).
  - 2.3 Carry out repair / calibration in accordance with EMP207 Calibration of OHLE Live Line Testers.
  - 2.3 Complete the results sheet header and enter Pass / Fail.
- All records must be kept for audit purposes

### **References**

Appendix A Calibration Results for a GTRM/Carillion Rail 25kV Overhead Live Line Tester

Document Reference: NR/L3/MTC/ME0201/CAL263

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### Appendix A

#### Calibration Results for a GTRM/Carillion Rail 25kV Overhead Live Line Tester

Model ..... Serial No .....

Date ..... Result .....

Lab Temp / RH ..... Operator .....

User Location ..... Certificate No .....

#### Movement Check

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

**Test 2** Instrument balance  $\pm 1\%$  at  $45^\circ$  all planes Pass / Fail

**Test 3** Using the proving unit, check free movement of the pointer both up and down the scale  
Pass / Fail

#### L.L.T. Calibration

UUT accuracies:  $\pm 3.5\%$  FSD

| Test No | L.L.T. kV | Digital kV Meter |                | Result      |
|---------|-----------|------------------|----------------|-------------|
|         |           | Reading          | Allowed Limits |             |
| 4       | 5         |                  | 3.95 – 6.05    | Pass / Fail |
| 5       | 10        |                  | 8.95 – 11.05   | Pass / Fail |
| 6       | 15        |                  | 13.95 – 16.05  | Pass / Fail |
| 7       | 20        |                  | 18.95 – 21.05  | Pass / Fail |
| 8       | 25        |                  | 23.95 – 26.05  | Pass / Fail |
| 9       | 30        |                  | 28.95 – 31.05  | Pass / Fail |
| 10      | 25        |                  | 23.95 – 26.05  | Pass / Fail |
| 11      | 20        |                  | 18.95 – 21.05  | Pass / Fail |
| 12      | 15        |                  | 13.95 – 16.05  | Pass / Fail |
| 13      | 10        |                  | 8.95 – 11.05   | Pass / Fail |
| 14      | 5         |                  | 3.95 – 6.05    | Pass / Fail |

#### Resistor Pole – Impedance Value

**Test 15** Measure current and voltage at approximately 20kV

Voltage = kV Current = Ua  
Impedance =  $\frac{V}{I}$  = Mohm

Model LM 39 – is Impedance between 37 and 41 Mohm  
Model LM 40 – is Impedance between 39 and 41 Mohm

Pass / Fail  
Pass / Fail