

CERTIFICATE OF CALIBRATION

Issued By Britannia Test & Measurement Ltd

Date of Issue 07 March 2018

Certificate Number
STD6503

Page 1 of 3 Pages



Britannia Test & Measurement
Cleveland House
Eston Road
Middlesbrough
TS6 6UA

Approved Signatory

A.O'Brien

P.Trattles

Customer : ViaMed
16 Station Road, Keighley
West Yorkshire BD20 7DT

Date Received :

| | | |
|---------------------|--------------------------|--|
| Instrument - | System ID : ID2750 | Description : Electrical Safety Analyzer |
| | Manufacturer : Fluke | |
| | Model Number : ESA615 | |
| | Serial Number : 2433026 | Last Certificate Number : STD4555 |
| | Procedure Version : 1.00 | Last Calibration Date : 23/02/2017 |

Environmental Conditions

| | | | |
|---------------------|--------------|-------------------|--------------|
| Temperature : | 21°C +/- 1°C | Mains Voltage : | 240V +/- 10V |
| Relative Humidity : | 50% +/- 10% | Mains Frequency : | 50Hz +/- 1Hz |

Comments

Instrument was placed in lab and allowed to stabilise before calibration.

Traceability Information

| <i>Instrument description</i> | <i>Serial number</i> | <i>Certificate number</i> | <i>Cal. Date</i> | <i>Cal. Period</i> |
|--|----------------------|---------------------------|------------------|--------------------|
| 3200A Electrical Test Calibrator (STD) | M1384F15 | 33837 | 12/07/2017 | 52 |
| 8840A Multimeter | 4016001 | F7316006 | 03/10/2017 | 52 |

Calibrated By : P.Trattles

Date of Calibration : 07 March 2018

This certificate provides traceability of measurement to recognised National Standards, and to the units of measurement realised at the National Physical Laboratory or other recognised National Standards laboratories.
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This certificate complies with the requirements of BS EN ISO 10012:2003.

CERTIFICATE OF CALIBRATION

Certificate Number
STD6503

Page 2 of 3 Pages

| Test Title | Tolerance | Applied Value | Reading | Pass/Fail |
|--|-----------|---------------|---------|-----------|
| General Operation Tests | | | | |
| Controls & Display | --- | --- | Pass | |
| 200mA Protective Earth Resistance | | | | |
| Resistance | 16mΩ | 0.09Ω | 0.083Ω | Pass |
| Resistance | 17mΩ | 0.14Ω | 0.144Ω | Pass |
| Resistance | 19.4mΩ | 0.26Ω | 0.251Ω | Pass |
| Resistance | 21.6mΩ | 0.38Ω | 0.363Ω | Pass |
| Resistance | 25mΩ | 0.55Ω | 0.545Ω | Pass |
| Resistance | 35mΩ | 1.05Ω | 1.039Ω | Pass |
| Insulation Resistance @ 250V | | | | |
| 1MΩ | 220kΩ | 1.00MΩ | 1.0MΩ | Pass |
| 5MΩ | 300kΩ | 5.00MΩ | 5.0MΩ | Pass |
| 10MΩ | 400kΩ | 10.00MΩ | 9.9MΩ | Pass |
| 15MΩ | 500kΩ | 15.00MΩ | 14.9MΩ | Pass |
| 19MΩ | 580kΩ | 19.00MΩ | 18.8MΩ | Pass |
| 50MΩ | 4MΩ | 50.00MΩ | 49.1MΩ | Pass |
| 90MΩ | 7MΩ | 90.00MΩ | 88.5MΩ | Pass |
| Insulation Resistance @ 500V | | | | |
| 1MΩ | 220kΩ | 1.00MΩ | 1.0MΩ | Pass |
| 5MΩ | 300kΩ | 5.00MΩ | 5.0MΩ | Pass |
| 10MΩ | 400kΩ | 10.00MΩ | 9.9MΩ | Pass |
| 15MΩ | 500kΩ | 15.00MΩ | 14.9MΩ | Pass |
| 19MΩ | 580kΩ | 19.00MΩ | 18.9MΩ | Pass |
| 50MΩ | 4MΩ | 50.00MΩ | 49.0MΩ | Pass |
| 90MΩ | 7MΩ | 90.00MΩ | 88.4MΩ | Pass |
| Leakage Current (AC+DC) | | | | |
| 2mA | 30uA | 1.99mA | 2.01mA | Pass |
| 4.7mA | 57uA | 4.77mA | 4.82mA | Pass |
| Equipment Current | | | | |
| O/C Test | --- | --- | Pass | |
| 0.5A Test | 225mA | 0.50A | 0.5A | Pass |
| Point To Point Voltage | | | | |
| Mains | 2.2V | 100.40V | 100.3V | Pass |
| Mains | 4.2V | 200.80V | 200.7V | Pass |

Uncertainties

| | |
|-----------------|---|
| Earth Bond Ohms | 0.5% + 4mohms |
| Bond Current | 0 to 30 Amps: 1.5% + 6counts. |
| PAT Leakage | 1.5% + 0.3mA |
| Insulation Ohms | 10kohms to 5Mohms: 0.1%, 5Mohms to 10Gohms: 1% +/- 1 Digit. |
| Frequency | 0.1ppM ± 1digit |
| Resistance | 0 to 10MOhms 0.005% ± 1digit: 10Mohms to 1Gohm 0.4% ± 1 digit |
| A.C. Current | 0 to 10A: 0.02% ± 2digit |
| A.C. Voltage | 0 to 1000V: 0.01% ± 1digit |

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STD6503

Page 3 of 3 Pages

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|------------|-----------|---------------|---------|-----------|
|------------|-----------|---------------|---------|-----------|

End of results

Uncertainties

| | |
|-----------------|---|
| Earth Bond Ohms | 0.5% + 4mohms |
| Bond Current | 0 to 30 Amps: 1.5% + 6counts. |
| PAT Leakage | 1.5% + 0.3mA |
| Insulation Ohms | 10kohms to 5Mohms: 0.1%, 5Mohms to 10Gohms: 1% +/- 1 Digit. |
| Frequency | 0.1ppM ± 1digit |
| Resistance | 0 to 10MOhms 0.005% ± 1digit: 10Mohms to 1Gohm 0.4% ± 1 digit |
| A.C. Current | 0 to 10A: 0.02% ± 2digit |
| A.C. Voltage | 0 to 1000V: 0.01% ± 1digit |