CERTIFICATE OF CALIBRATION

Issued By Transmille Ltd. **Certificate Number** 25593

Date of Issue 06 March 2014

UKAS CALIBRATION 0324

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Approved Signatory

☒ G.A. Shapland ☐ M.A. Bailey ☐ S.A. Hawkins ☐ J.A. Bailey

Customer : SIGNATROL LTD
UNIT E2, GREEN LANE BUSINESS PARK
TEWKESBURY GLOUCESTERSHIRE GL20 8SJ.

Date Received : 04 March 2014

Instrument :

System ID :	A1A050872	Job Number :	50972-1
Description :	Digital Multimeter (6.5 digit)	Ref. Number :	CE026
Manufacturer :	Agilent		
Model Number :	34401A		
Serial Number :	MY41050872		
Procedure Version :	3.02/N		

Environmental Conditions

Temperature : 20°C +/- 1°C
Relative Humidity : 50% +/- 20%
Mains Voltage : 230V +/- 12V
Mains Frequency : 50Hz +/- 1Hz

Comments

Instrument was allowed to stabilise for at least 12 hours before calibration.
4 Wire kelvin connections were used for ohms measurements below 10kOhms
Front Panel Terminals were used for calibration.

Calibration Information

The instrument was calibrated against laboratory standards whose values are traceable to recognised National Standards. The uncertainty limits quoted refer to the measured values only, with no account being taken of the instruments ability to maintain its calibration.

The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor k=2, providing a level of confidence of approximately 95%. The uncertainty evaluation has been carried out in accordance with UKAS requirements.

Calibrated By : M.A. Bailey **Date of Calibration :** 06 March 2014

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AS FOUND RESULTS

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Test Title	Applied Value	Reading	Uncertainties
DC Voltage			
100mV D.C. Range	100.000 0mV	99.998 6mV	590nV
1V D.C. Range	1.000 000V	1.000 002V	3.4uV
10V D.C. Range	10.000 00V	10.000 03V	40uV
100V D.C. Range	100.000 0V	99.998 9V	40uV
1000V D.C. Range	1 000.000V	999.989V	4mV
AC Voltage			
100mV A.C. @ 200Hz	100.000 0mV	99.962 8mV	38uV
1V A.C. @ 200Hz	1.000 000V	0.999 759V	121uV
10V A.C. @ 40Hz	10.000 00V	9.992 34V	1.2mV
10V A.C. @ 200Hz	10.000 00V	9.997 74V	1.2mV
10V A.C. @ 1kHz	10.000 00V	9.999 36V	1.2mV
10V A.C. @ 10kHz	10.000 00V	9.999 64V	2.7mV
100V A.C. @ 200Hz	100.000 0V	100.046 1V	12mV
750V A.C. @ 200Hz	700.000 0V	699.959 0V	13mV
DC Current			
10mA D.C. Range	10.000 00mA	10.001 67mA	95nA
100mA D.C. Range	100.000 0mA	99.996 4mA	875nA
1A D.C. Range	1.000 000A	0.999 754A	64uA
3A D.C. Range	2.000 00A	1.999 51A	110uA
AC Current @ 60Hz			
1A A.C. Rng @ 60Hz	0.100 00A	0.099 92A	70uA
1A A.C. Rng @ 60Hz	0.500 00A	0.499 57A	180uA
1A A.C. Rng @ 1kHz	1.000 00A	0.999 41A	310uA
3A A.C. Rng @ 60Hz	2.000 00A	1.997 95A	600uA
Resistance			
100Ω Range	99.998 7Ω	100.002 8Ω	170uΩ
1kΩ Range	1.000 005kΩ	1.000 046kΩ	1.7mΩ
10kΩ Range	10.000 04kΩ	10.000 44kΩ	20mΩ
100kΩ Range	100.004 0kΩ	100.009 7kΩ	240mΩ
1MΩ Range	1.000 080MΩ	1.000 119MΩ	5.2Ω
10MΩ Range	10.000 76MΩ	10.000 16MΩ	180Ω
100MΩ Range	100.001 9MΩ	100.360 7MΩ	1.6kΩ

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Test Title	Applied Value	Reading	Uncertainties
Linearity			
10V Linearity	-9.00000V	-9.00005V	37uV
10V Linearity	-8.00000V	-8.00003V	34uV
10V Linearity	-7.00000V	-7.00003V	31uV
10V Linearity	-6.00000V	-6.00004V	28uV
10V Linearity	-5.00000V	-5.00002V	25uV
10V Linearity	-4.00000V	-4.00002V	22uV
10V Linearity	-3.00000V	-3.00002V	20uV
10V Linearity	-2.00000V	-2.00001V	20uV
10V Linearity	-1.00000V	-1.00001V	20uV
10V Linearity	0.000 00V	0.000 00V	20uV
10V Linearity	1.000 00V	1.000 00V	20uV
10V Linearity	2.000 00V	2.000 00V	20uV
10V Linearity	3.000 00V	3.000 02V	20uV
10V Linearity	4.000 00V	4.000 00V	22uV
10V Linearity	5.000 00V	5.000 00V	25uV
10V Linearity	6.000 00V	6.000 03V	28uV
10V Linearity	7.000 00V	7.000 02V	31uV
10V Linearity	8.000 00V	8.000 01V	34uV
10V Linearity	9.000 00V	9.000 04V	37uV
Frequency			
10Hz	10.000 0Hz	10.000 0Hz	310uHz
100Hz	100.000Hz	100.000Hz	3.1mHz
1kHz	1.000 00kHz	1.000 00kHz	31mHz
10kHz	10.000 0kHz	10.000 0kHz	310mHz
100kHz	100.000kHz	100.000kHz	3.1Hz