CERTIFICATE OF CALIBRATION

Issued By Transmille Ltd. **Certificate Number** 41402

Date of Issue 28 May 2020

0324

Transmille Ltd.
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Approved Signatory

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

Customer : SIGNATROL LTD
UNIT E2, GREEN LANE BUSINESS PARK
TEWKESBURY

Date Received : 21 May 2020

Instrument :

System ID :	A1A050872	Job Number :	74385-1
Description :	Digital Multimeter (6½ digit)	Ref. Number :	CE026
Manufacturer :	Agilent	Site :	
Model Number :	34401A	Location :	
Serial Number :	MY41050872	Last Calibration Certificate :	38680
Procedure Version :	5/CL/R/N	Last Calibration Date :	10/05/2019

Environmental Conditions

Temperature : 20°C +/- 1°C
Relative Humidity : 40% +/- 20%
Mains Voltage : 230V +/- 12V
Mains Frequency : 50Hz +/- 1Hz

Comments

Instrument was allowed to stabilise for at least 12 hours before calibration.
Front terminals were used for measurements. UUT Controlled via GPIB
DCV, DCI & Resistance : 6.5 Digit Resolution, NPLC 100
ACV, ACI, FREQ : 6.5 Digit Resolution, 3Hz Band (SLOW)
Specifications Ref : Agilent P/N 34401-90013

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. Nelson **Date of Calibration :** 28 May 2020

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AS FOUND RESULTS

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Test Title	Applied Value	Reading	Uncertainties
General Operation			
Continuity Bleeper	---	Pass	
Diode Test	---	Pass	
DC Voltage Measurements			
100mV D.C. Range	0.000 00mV	0.000 7mV	±500nV
100mV D.C. Range	100.000 00mV	100.005 3mV	±590nV
1V D.C. Range	0.000 000 0V	0.000 000V	±2uV
1V D.C. Range	1.000 000 0V	1.000 002V	±3.4uV
10V D.C. Range	0.000 000V	0.000 00V	±12uV
10V D.C. Range	10.000 000V	10.000 04V	±40uV
100V D.C. Range	0.000 00V	0.000 0V	±120uV
100V D.C. Range	100.000 00V	99.997 7V	±400uV
1000V D.C. Range	0.000 0V	0.000V	±1.2mV
1000V D.C. Range	1 000.000 0V	999.971V	±4mV
Linearity - 10V DC Range			
10V D.C. Range	-9.000000V	-9.00008V	±37uV
10V D.C. Range	-8.000000V	-8.00002V	±34uV
10V D.C. Range	-7.000000V	-7.00005V	±31uV
10V D.C. Range	-6.000000V	-6.00006V	±28uV
10V D.C. Range	-5.000000V	-5.00000V	±25uV
10V D.C. Range	-4.000000V	-4.00002V	±22uV
10V D.C. Range	-3.000000V	-3.00003V	±20uV
10V D.C. Range	-2.000000V	-2.00002V	±20uV
10V D.C. Range	-1.000000V	-1.00000V	±20uV
10V D.C. Range	0.000 000V	0.000 00V	±20uV
10V D.C. Range	1.000 000V	1.000 00V	±20uV
10V D.C. Range	2.000 000V	2.000 01V	±20uV
10V D.C. Range	3.000 000V	3.000 03V	±20uV
10V D.C. Range	4.000 000V	4.000 01V	±22uV
10V D.C. Range	5.000 000V	4.999 98V	±25uV
10V D.C. Range	6.000 000V	6.000 04V	±28uV
10V D.C. Range	7.000 000V	7.000 02V	±31uV
10V D.C. Range	8.000 000V	8.000 00V	±34uV
10V D.C. Range	9.000 000V	9.000 07V	±37uV
AC Voltage Measurements			
100mV A.C. @ 200Hz	100.000 00mV	100.061 9mV	±45uV
1V A.C. @ 200Hz	1.000 000 0V	0.999 452V	±330uV
10V A.C. @ 40Hz	10.000 000V	9.995 61V	±7.9mV
10V A.C. @ 200Hz	10.000 000V	9.997 79V	±3mV
10V A.C. @ 1kHz	10.000 000V	9.999 46V	±4.3mV
10V A.C. @ 10kHz	10.000 000V	9.999 70V	±4.3mV
100V A.C. @ 200Hz	100.000 00V	99.994 7V	±32mV
750V A.C. @ 200Hz	700.000 00V	699.555 1V	±240mV
DC Current Measurements			
10mA D.C. Range	0.000 000mA	-0.00001mA	±26nA
10mA D.C. Range	10.000 000mA	9.999 96mA	±820nA
100mA D.C. Range	0.000 00mA	0.000 0mA	±120nA
100mA D.C. Range	100.000 00mA	100.000 9mA	±8.1uA
1A D.C. Range	0.000 000 0A	0.000 000A	±1.3uA

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1A D.C. Range	1.000 000 0A	0.999 734A	±190uA
3A D.C. Range	0.000 000A	0.000 00A	±12uA
3A D.C. Range	2.000 000A	1.999 50A	±350uA
AC Current Measurements			
1A A.C. Rng @ 60Hz	0.100 000 0A	0.100 037A	±73uA
1A A.C. Rng @ 60Hz	0.500 000 0A	0.499 689A	±610uA
1A A.C. Rng @ 1kHz	1.000 000 0A	1.000 098A	±6.3mA
3A A.C. Rng @ 60Hz	2.000 000A	1.997 79A	±1.8mA
4 Wire Resistance Measurements			
100Ω Range	100.006 45Ω	100.012 3Ω	±8mΩ
1kΩ Range	0.999 963 0kΩ	1.000 005kΩ	±29mΩ
10kΩ Range	10.000 396kΩ	10.000 73kΩ	±190mΩ
100kΩ Range	99.995 80kΩ	100.001 0kΩ	±2.9Ω
2 Wire Resistance Measurements			
1MΩ Range	1.000 028 0MΩ	1.000 088MΩ	±39Ω
10MΩ Range	10.002 300MΩ	10.001 82MΩ	±1.3kΩ
100MΩ Range	99.896 00MΩ	100.097 3MΩ	±220kΩ

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Test Title	Applied Value	Reading	Uncertainties
Frequency Measurements			
5Hz to 10Hz Range	10.000 000Hz	10.000 02Hz	±210uHz
40Hz to 300kHz Range	100.000 00Hz	100.000 2Hz	±2.1mHz
40Hz to 300kHz Range	1.000 000 0kHz	1.000 002kHz	±21mHz
40Hz to 300kHz Range	10.000 000kHz	10.000 02kHz	±210mHz
40Hz to 300kHz Range	100.000 00kHz	100.000 2kHz	±2.1Hz

End of results