SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005
& ANSI/NCSL Z540-1-1994

ANKO ELECTRONICS
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CALIBRATION

Valid until: October 31, 2016 Certificate Number: 3270.02

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following calibrations[1]:

I. Electrical – DC/Low Frequency

Parameter/Equipment	Range	CMC[2, 3] (±)	Comments
DC Voltage – Generate	(0 to 329.999) mV 330 mV to 3.299999 V (3.3 to 32.99999) V (33 to 329.9999) V 100 V to 1 kV	15 µV/V + 2.1 µV 11 µV/V + 2.0 µV 9.8 µV/V + 20 µV 14 µV/V + 0.15 mV 15 µV/V + 1.5 mV	Fluke 5520A
DC Current – Generate	(0 to 329.999) µA (0 to 3.29999) mA (0 to 32.9999) mA (0 to 329.999) mA (0 to 1.09999) A	0.012 % + 20 nA 77 µA/A + 50 nA 76 µA/A + 0.25 µA 74 µA/A + 2.5 µA 0.015 % + 40 µA	Fluke 5520A

Parameter/Equipment	Range	CMC[2, 3] (±)	Comments
DC Resistance – Generate	(0 to 10.9999) Ω (11 to 32.9999) Ω (33 to 109.9999) Ω (110 to 329.9999) Ω 330 to 1.099999 kΩ (1.1 to 3.299999) kΩ (3.3 to 10.99999) kΩ (11 to 32.9999) kΩ (33 to 109.9999) kΩ (110 to 329.9999) kΩ 330 k to 1.099999 MΩ (1.1 to 3.299999) MΩ (3.3 to 10.99999) MΩ (11 to 32.9999) MΩ (33 to 109.9999) MΩ (110 to 329.9999) MΩ (330 to 1100) MΩ	31 μΩ/Ω 27 μΩ/Ω 22 μΩ/Ω 22 μΩ/Ω 22 μΩ/Ω 23 μΩ/Ω 23 μΩ/Ω 23 μΩ/Ω 23 μΩ/Ω 26 μΩ/Ω 29 μΩ/Ω 49 μΩ/Ω 0.012 % 0.020 % 0.045 % 0.24 % 1.2 %	Fluke 5520A

Parameter/Range	Frequency	CMC[2, 3] (±)	Comments
AC Voltage – Generate			
(1 to 33) mV	(10 to 45) Hz 45 Hz to 10 kHz (10 to 20) kHz (20 to 50) kHz (50 to 100) kHz (100 to 500) kHz	0.061 % + 6.0 μV 0.012 % + 6.0 μV 0.015 % + 6.0 μV 0.065 % + 6.0 μV 0.26 % + 12 μV 0.59 % + 50 μV	Fluke 5520A
(33 to 330) mV	(10 to 45) Hz 45 Hz to 10 kHz (10 to 20) kHz (20 to 50) kHz (50 to 100) kHz (100 to 500) kHz	0.023 % + 8.0 μV 0.012 % + 8.0 μV 0.011 % + 8.0 μV 0.024 % + 8.0 μV 0.059 % + 32 μV 0.14 % + 70 μV	

Parameter/Range	Frequency	CMC[2, 3] (±)	Comments
AC Voltage – Generate (cont)			
(0.33 to 3.3) V	(10 to 45) Hz 45 Hz to 10 kHz (10 to 20) kHz (20 to 50) kHz (50 to 100) kHz (100 to 500) kHz	0.023 % + 50 µV 0.012 % + 60 µV 0.013 % + 60 µV 0.022 % + 50 µV 0.052 % + 0.13 mV 0.17 % + 0.60 mV	Fluke 5520A
(3.3 to 33)V	(10 to 45) Hz 45 Hz to 10 kHz (10 to 20) kHz (20 to 50) kHz (50 to 100) kHz	0.024 % + 0.65 mV 0.012 % + 0.60 mV 0.017 % + 0.60 mV 0.025 % + 0.60 mV 0.067 % + 1.6 mV	
(33 to 330)V	45 Hz to 1 kHz (1 to 10) kHz (10 to 20) kHz (20 to 50) kHz (50 to 100) kHz	0.012 % + 2.0 mV 0.016 % + 6.0 mV 0.017 % + 6.0 mV 0.024 % + 6.0 mV 0.15 % + 50 mV	
(330 to 1020) V	45 Hz to 1 kHz (1 to 5) kHz (5 to 10) kHz	0.022 % + 10 mV 0.018 % + 10 mV 0.023 % + 10 mV	
AC Current – Generate			
(29 to 330) µA	(10 to 20) Hz (20 to 45) Hz 45 Hz to 1 kHz (1 to 5) kHz (5 to 10) kHz (10 to 30) kHz	0.15 % + 0.10 µA 0.11 % + 0.10 µA 0.10 % + 0.10 µA 0.22 % + 0.15 µA 0.62 % + 0.20 µA 1.2 % + 0.40 µA	Fluke 5520A
330 µA to 3.3mA	(10 to 20) Hz (20 to 45) Hz 45 Hz to 1 kHz (1 to 5) kHz (5 to 10) kHz (10 to 30) kHz	0.15 % + 0.15 µA 0.091 % + 0.15 µA 0.078 % + 0.15 µA 0.16 % + 0.20 µA 0.38 % + 0.30 µA 0.78 % + 0.60 µA	

Parameter/Range	Frequency	CMC[2, 3] (±)	Comments
AC Current – Generate (cont)			
(3.3 to 33) mA	(10 to 20) Hz (20 to 45) Hz 45 Hz to 1 kHz (1 to 5) kHz (5 to 10) kHz (10 to 30) kHz	0.14 % + 2.0 µA 0.063 % + 2.0 µA 0.033 % + 2.0 µA 0.064 % + 2.0 µA 0.15 % + 3.0 µA 0.32 % + 4.0 µA	Fluke 5520A
(33 to 330) mA	(10 to 20) Hz (20 to 45) Hz 45 Hz to 1 kHz (1 to 5) kHz (5 to 10) kHz (10 to 30) kHz	0.13 % + 20 µA 0.063 % + 20 µA 0.033 % + 20 µA 0.079 % + 50 µA 0.15 % + 0.10 mA 0.32 % + 0.20 mA	
330 mA to 1.09999 A	(10 to 45) Hz 45 Hz to 1 kHz (1 to 5) kHz (5 to 10) kHz	0.14 % + 0.10 mA 0.038 % + 0.10 mA 0.46 % + 1.0 mA 1.9 % + 5.0 mA	

[1] This laboratory offers commercial calibration service.

[2] Calibration and Measurement Capability Uncertainty (CMC) is the smallest uncertainty of measurement that a laboratory can achieve within its scope of accreditation when performing more or less routine calibrations of nearly ideal measurement standards or nearly ideal measuring equipment. CMCs represent expanded uncertainties expressed at approximately the 95 % level of confidence, usually using a coverage factor of $k = 2$. The actual measurement uncertainty of a specific calibration performed by the laboratory may be greater than the CMC due to the behavior of the customer's device and to influences from the circumstances of the specific calibration.

[3] The stated measured values are determined using the indicated instrument (see Comments). This capability is suitable for the calibration of the devices intended to measure or generate the measured value in the ranges indicated. CMCs are expressed as either a specific value that covers the full range or as a fraction of the reading plus a fixed floor specification.

American Association for Laboratory Accreditation

Accredited Laboratory

A2LA has accredited

ANKO ELECTRONICS

Anaheim, CA

for technical competence in the field of

Calibration

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005 *General requirements for the competence of testing and calibration laboratories*. This laboratory also meets the requirements of ANSI/NCSL Z540-1-1994 and any additional program requirements in the field of calibration. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (*refer to joint ISO-ILAC-IAF Communiqué dated 8 January 2009*).

Presented this 11th day of December 2014.

President & CEO
For the Accreditation Council
Certificate Number 3270.02
Valid to October 31, 2016

For the calibrations to which this accreditation applies, please refer to the laboratory's Calibration Scope of Accreditation.