AccuMac Technology Inc

Certificate of Calibration

NVLAP CALIBRATION
NVLAP LAB CODE 600363-0

Calibration Procedure: AM-2009-RO

Customer: M3 Logistics LLC
5303 Brown Bridge Rd
Gainesville, GA 30504

Certificate Number: 361059
Calibration Date: 19-Nov-2024
Issue Date: 19-Nov-2024
Due Date:
Model: AM8060
Serial Number: 60150822
Condition: New

Manufacturer: AccuMac Technology Inc
Description: Precision Thermometer

The Precision Thermometer referenced above was calibrated by resistance using a set of reference resistors and thermometry bridge. The calibration is compliant to ISO/IEC 17025:2017 and ANSI/NCSL Z540-1:1994. Reference standards used in this calibration are traceable to the SI through an NMI (NIST in USA) recognized through a CIPM MRA. This report shall not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the U.S. federal government. This certificate may not be reproduced, except in full, without the written approval of AccuMac Technology Inc.

The following reference standards and measurement equipment were used in this calibration.

Instrument	Model	S/N	Cal Date	Due Date
Reference Resistor Set	AM-RS999	107	8/5/2024	8/5/2025

The Precision Thermometer has two internal reference resistors. One is 25-ohm, the other is 100-ohm. When it measures a nominal 25-ohm SPRT/IPRT, it automatically selects the 25-ohm internal reference resistor. When measuring a nominal 100-ohm SPRT/IPRT it automatically selects the 100-ohm internal reference resistor. This process ensures more accurate measurements. The calibration process covers both types of SPRT/IPRT when comparing readout measurements against the reference resistor set. Calibration results are shown in the below tables.

The calibration/test results relate only to the items calibrated/tested with appropriate ranges/values identified. Recorded calibration data is valid at the time of calibration within the stated uncertainties at the environmental conditions noted. When a statement of conformity to a specification or standard is required, AccuMac Technology Inc provides the customer with the measurement result and the associated measurement uncertainty for the customer to make a decision on the suitability of conformance to their specifications.

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Certificate of Calibration

NVLAP CALIBRATION
NVLAP LAB CODE 600363-0

Calibration Procedure: AM-2009-RD

Customer: M3 Logistics LLC
5303 Brown Bridge Rd
Gainesville, GA 30504

Certificate Number: 361059
Calibration Date: 19-Nov-2024
Issue Date: 19-Nov-2024
Due Date:
Model: AM8060
Serial Number: 60150822
Condition: New

Manufacturer: AccuMac Technology Inc
Description: Precision Thermometer

System expanded uncertainty evaluation includes the calibration reference used and unit under test (UUT), and is calculated in accordance with ISO "Guide to the Expression of Uncertainty in Measurement" (GUM). The calibration uncertainties are reported at a coverage factor of k=2 for a level of confidence of approximately 95%. The calibration uncertainty is ±100 µΩ across the entire measurement range.

Calibration Results

		25-ohm SPRT/IPRT				100-ohm SPRT/IPRT			
	Ref Rs Input	Measured	ΔR (Ω)	Δt (°C)	Tolerance (°C)	Measured	ΔR (Ω)	Δt (°C)	Tolerance (°C)
Channel 1	9.99974	9.9998	0.00006	0.0006	0.010	10.0010	0.00126	0.0031	0.010
	24.99974	24.9997	-0.00004	-0.0004	0.010	25.0017	0.00196	0.0049	0.010
	50.00085	50.0005	-0.00035	-0.0035	0.015	50.0016	0.00075	0.0019	0.010
	75.00667	75.0061	-0.00057	-0.0057	0.020	75.0068	0.00013	0.0003	0.010
	99.99462					99.9946	-0.00002	-0.0001	0.008
	200.00886					200.0087	-0.00016	-0.0004	0.009
	374.99028					374.9873	-0.00298	-0.0074	0.015

		25-ohm SPRT/IPRT				100-ohm SPRT/IPRT			
	Ref Rs Input	Measured	ΔR (Ω)	Δt (°C)	Tolerance (°C)	Measured	ΔR (Ω)	Δt (°C)	Tolerance (°C)
Channel 2	9.99974	9.9998	0.00006	0.0006	0.010	10.0008	0.00106	0.0026	0.010
	24.99974	24.9997	-0.00004	-0.0004	0.010	25.0015	0.00176	0.0044	0.010
	50.00085	50.0005	-0.00035	-0.0035	0.015	50.0016	0.00075	0.0019	0.010
	75.00667	75.0060	-0.00067	-0.0067	0.020	75.0063	-0.00037	-0.0009	0.010
	99.99462					99.9946	-0.00002	-0.0001	0.008
	200.00886					200.0085	-0.00036	-0.0009	0.009
	374.99028					374.9865	-0.00378	-0.0094	0.015

Comments:

Calibration Environment Conditions

Temperature: 23.5°C

Performed by: Katya Dekhterman

Approved by: Kirsa Van Dusen