



# CERTIFICATE OF ACCREDITATION

## The ANSI National Accreditation Board

Hereby attests that

### **Antibus Scales & Systems, Inc.**

**4310 Technology Drive  
South Bend, IN 46628**

Fulfills the requirements of

### **ISO/IEC 17025:2017**

In the field of

### **CALIBRATION**

This certificate is valid only when accompanied by a current scope of accreditation document.  
The current scope of accreditation can be verified at [www.anab.org](http://www.anab.org).

A handwritten signature in black ink, appearing to be 'J. Stine', is positioned above a horizontal line.

Jason Stine, Vice President

Expiry Date: 11 May 2028

Certificate Number: L2253.01



This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017.  
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 April 2017).

**SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017**

**Antibus Scales & Systems, Inc.**

4310 Technology Drive  
South Bend, IN 46628

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**CALIBRATION**

ISO/IEC 17025 Accreditation Granted: **08 May 2026**

Certificate Number: **L2253.01** Certificate Expiry Date: **11 May 2028**

**Electrical – DC/Low Frequency**

<b>Parameter/Equipment</b>	<b>Range</b>	<b>Expanded Uncertainty of Measurement (+/-)</b>	<b>Reference Standard, Method, and/or Equipment</b>
DC Current Measure and Source <sup>1</sup>	0 to 4 mA 4.1 to 10 mA 10.1 to 20 mA	0.006 mA 0.009 mA 0.009 mA	Comparison to Fluke Series Process Calibrator
Resistance Source and Measure <sup>1</sup>	(0 to 55) Ω (56 to 250) Ω (251 to 680) Ω	0.11 Ω 0.74 Ω 1.0 Ω	Comparison to Fluke Series Process Calibrator
Electrical Simulation of RTD Indicating Devices Pt 385 100 Ω <sup>1</sup>	(-180 to 750) °C	0.67 °C	Comparison to Fluke Series Process Calibrator
DC Voltage – Source	(0 to 10) mV (11 to 100) mV (0 to 0.15) V (0.16 to 1.0) V (0 to 1.5) V (1.6 to 10) V (11 to 15) V	0.006 3 mV 0.015 mV 0.000 067 V 0.000 15 V 0.000 87 V 0.001 6 V 0.002 1 V	Comparison to Fluke Series Process Calibrator

**Electrical – DC/Low Frequency**

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
DC Voltage - Measure	(0.0) mV	0.006 7 mV	Comparison to Fluke Series Process Calibrator
	(0.1 to 100) mV	0.026 mV	
	(0.0) V	0.000 071 V	
	(0.1 to 1.0) V	0.000 26 V	
	(1.1 to 2.0) V	0.000 45 V	
	(2.1 to 3.0) V	0.000 65 V	
	(0.0) V	0.000 57 V	
	(0.1 to 10) V	0.002 5 V	
	(11 to 30) V	0.006 5 V	
	(0.0) V	0.051 V	
	(0.1 to 100) V	0.11 V	
	(101 to 300) V	0.21 V	
Electrical Simulation of Thermocouple Indicating Devices <sup>1</sup>	Type K (-195 to 1 260) °C	0.87°C	Comparison to Fluke Series Process Calibrator
	Type J (0 to 760) °C	0.87°C	
	Type T (-195 to 370) °C	0.87°C	

**Length – Dimensional Metrology**

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
End Standards	(Up to 12) in	39 μin	Comparison to Gage Blocks and P & W LMU 175
Rules and Scales	(0 to 72) in	0.013 in	Comparison to Gage Blocks and magnifier
Plug / Pin Gages <sup>1</sup>	Up to 4 in	29 μin	Comparison to Gage Blocks using P&W LMU 175
Thread Wires (80 to 6) TPI	(0.007 to 0.097) in	19 μin	Comparison to Gage Blocks using P&W LMU 175
Gage Blocks	(0.005 to 4) in (4 to 12) in	8 μin 13 μin	Comparison to Gage Blocks using Comparator

**Length – Dimensional Metrology**

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
OD Cylinder Gages	(0 to 1) in (1 to 10) in	(10 + 1.5L) μin (11 + 6L) μin	Comparison to Gage Blocks using P&W LMU 175
Ring Gages	(0.04 to 1) in (1 to 12) in	(10 + 1.5L) μin (11 + 6L) μin	Comparison to Gage Blocks using P&W LMU 175
Thread Plugs <sup>1</sup> Pitch Diameter (80 to 6) TPI Major Diameter	(0.007 to 0.097) in Up to 4 in	130 μin 43 μin	Comparison to Thread Wires using P&W LMU 175
Almen Kit Step Blocks Depth	(0.005 to 0.025) in (0.2 to 0.6) mm	40 μin 1 μm	Comparison to Gage Blocks using Electronic Indicator
Flatness	(0 to 2) inD	0.05 μm	Optical Flat
Height Gages <sup>1</sup> 0.000 1 in resolution 0.001 in resolution	(0 to 24) in	121 μin 825 μin	Comparison to Gage Blocks
Indicators <sup>1</sup> 0.000 05 in resolution 0.000 1 in resolution 0.000 5 in resolution 0.001 in resolution	(0 to 6) in	(29 + 0.28L) μin (58 + 0.14L) μin (289 + 0.04L) μin (577 + 0.02L) μin	Comparison to Gage Blocks
Calipers <sup>1</sup> 0.000 5 in resolution 0.001 in resolution	(0 to 40) in	420 μin 840 μin	Comparison to Gage Blocks
OD Micrometers <sup>1</sup> 0.000 05 in resolution 0.000 1 in resolution 0.001 in resolution	(0 to 4) in (0 to 12) in (0 to 24) in	64 μin 100 μin 610 μin	Comparison to Gage Blocks
Bore Gages <sup>1</sup>	(0.25 to 6) in	586 μin	Comparison to Master Ring and Gage Blocks
Almen Gauges Indicator Accuracy	(0.005 to 0.025) in (0.2 to 0.6) mm	80 μin 2 μm	Comparison to Step Blocks
Depth Gages <sup>1</sup> 0.000 1 in resolution 0.001 in resolution	(0 to 12) in	(289 + 0.05L) μin (577 + 0.03L) μin	Comparison to Depth Standard/Gage Blocks
Optical Comparators <sup>1</sup> Linear Travel Angle	(0 to 10) in Angle 0° to 90°	160 μin 0.11 °	Comparison to Gage Blocks/Gage Balls/Sine Bar

**Length – Dimensional Metrology**

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Protractors			
Angle	(0 to 90) °	0.10 °	Comparison to Gage Blocks and Sine Bar
Angle	(0 to 90) °	0.81 °	Measurement using Optical Comparator

**Mass and Mass Related**

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Force Gages & Cells <sup>1,6</sup> : UUTs with accuracies ≤ 0.1%	(0 to 10 000) lbf	1d + 0.033% load	Comparison to Class F/6 Weights
Force Gages & Cells <sup>1,6</sup> : UUTs with accuracies > 0.1%	(0 to 30 000) lbf	1d + 0.1% load	Comparison to Class F/6 Weights
Force – Tension and Compression: UUTs with accuracies ≤ 0.1% <sup>6</sup>	(0 to 4 999) lbf (5 000 to 9 999) lbf (10 000 to 100 000) lbf	1d + 0.072% load 1d + 0.051% load 1d + 0.035% load	Comparison to Morehouse Precision Test Stand
Force – Tension and Compression: UUTs with accuracies > 0.1% <sup>6</sup>	(0 to 1 000) lbf (1 001 to 100 000) lbf	1d + 0.18% load 1d + 0.17% load	Comparison to Morehouse Precision Test Stand
Force – Tension and Compression <sup>1,6</sup>	(0 to 100 000) lbf	1d + 0.2% load	Comparison to Load Cells
Durometers (Type A & D) Spring Force	(20 to 90) Duro (10 to 90) Duro	1.1 Duro 1.8 Duro	Direct Verification via ASTM D 2240 Balance Durometer Calibrator
Indenter Dimensions			
Length	(0 to 0.2) in	0.000 49 in	Optical Comparator
Diameter	(0 to 0.2) in	0.000 49 in	
Radius	(0 to 0.2) in	0.000 49 in	
Angle	(0 to 35) Deg	0.56 Deg	Optical Comparator

**Mass and Mass Related**

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Rockwell Hardness Testers (Regular) <sup>1</sup>	HRA High Middle Low HRBW High Middle Low HRC High Middle Low	4.2 HRA 4.2 HRA 4.2 HRA 4.4 HRBW 4.4 HRBW 4.4 HRBW 4.2 HRC 4.2 HRC 4.2 HRC	Indirect Verification per ASTM E 18 Hardness Test Blocks
Rockwell Hardness Testers (Superficial) <sup>1</sup>	HR15N High Middle Low HR15TW High Middle Low HR30N High Middle Low HR30TW High Middle Low	4.2 HR15N 4.2 HR15N 4.2 HR15N 4.4 HR15TW 4.4 HR15TW 4.4 HR15TW 4.2 HR30N 4.2 HR30N 4.2 HR30N 4.4 HR30TW 4.4 HR30TW 4.4 HR30TW	Indirect Verification per ASTM E 18 Hardness Test Blocks

**Mass and Mass Related**

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment		
Brinell Hardness Tester <sup>1</sup>	HBW 10/3 000 High Diameter Hardness	0.089 mm 33 HBW	Indirect Verification per ASTM E10-14		
	HBW 10/3 000 Low Diameter Hardness	0.089 mm 11 HBW			
	HBW 10/1 500 High Diameter Hardness	0.089 mm 23 HBW			
	HBW 10/1 500 Low Diameter Hardness	0.089 mm 9.9 HBW			
	HBW 10/500 High Diameter Hardness	0.089 mm 11 HBW			
	HBW 10/500 Low Diameter Hardness	0.089 mm 4.3 HBW			
	Class F,6 and lower Mass Standards	20 lb		0.000 42 lb	Modified Substitution
		25 lb		0.000 52 lb	
50 lb		0.001 lb			
500 lb		0.011 lb			
1 000 lb		0.021 lb			
10 kg		0.23 g			
20 kg		0.41 g			
Lab Balances <sup>1,6</sup> Five & Six Place Balances	(0 to 500) g	1d + 0.004 1% of load	Class 1 Weights and NIST Handbook 44 utilized for the Calibration of Weighing Systems		
	Four Place and Class 1 Equivalent Balances	(0 to 8 000) g		1d + 0.000 3% of load	
	Class 2 & High Precision Scales	(0 to 8 000) g		0.6d + 0.000 07% of load	
Lab Balances and High Precision Scales <sup>1,6</sup>	(0 to 150) kg	1d + 0.001 2% of load	Comparison to Class 2 and/or 3 Weights with Substitution to range of use Systems		

**Mass and Mass Related**

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
High Resolution Unmarked Scales <sup>1,6</sup>	(0 to 5 000) kg	1d + 0.012% of load	Comparison to Class F,6 Weights with Substitution to range of use
	(0 to 50 000) lb	1d + 0.012% of load	
Industrial and Commercial Scales <sup>1,4,6</sup>	(0 to 5 000) kg	1d + 0.004% of load	Class F,6 Weights and NIST Handbook 44 utilized for the Calibration of Weighing Systems
	(0 to 200 000) lb	1d + 0.004% of load	
Torque Analyzers	(1 to 10) ozf·in (10 to 50) ozf·in (4 to 50) lbf·in (30 to 400) lbf·in (80 to 1 000) lbf·in (20 to 250) lbf·ft (60 to 600) lbf·ft (200 to 2 000) lbf·ft	0.096 % of reading 0.061 % of reading 0.076 % of reading 0.062 % of reading 0.071 % of reading 0.062 % of reading 0.070 % of reading 0.074 % of reading	Comparison to Torque Arm and Class F/6 Weights
Torque Wrench <sup>1</sup>			
With Accuracies of 0 to 1.5%	(1 ozf·in to 2 000 lbf·ft)	1.2 % of reading	Comparison to Torque Analyzer
With Accuracies > 1.5%	(1 ozf·in to 2 000 lbf·ft)	2.6 % of reading	
Pressure - Pneumatic <sup>1,6</sup>	(0 to 30) psi	0.5d + 0.13 psi	Comparison to Pressure Transducer
	(31 to 500) psi	0.5d + 0.39 psi	
	(501 to 1 000) psi	0.5d + 1.6 psi	
	(1 001 to 5000) psi	0.5d + 4.0 psi	
	(5 000 to 10 000) psi	0.5d + 8.5 psi	
Vacuum <sup>1,6</sup>	(-15 to 0) psi	0.5d + 0.039 psi	Comparison to Vacuum Transducer

**Thermodynamic**

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Humidity Indicators <sup>1,6</sup>	11%RH	0.98 %RH	Comparison to Saturated Salts & Capacitive Probe
	33 %RH	1.1 %RH	
	75 %RH	1.4 %RH	
	97%RH	1.6 %RH	

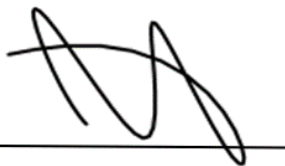
**Thermodynamic**

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Humidity Indicators <sup>1,6</sup>	(0 to 80) %RH	3.8 %RH	Comparison to Rotrotronic Hygropalm <sup>1</sup>
Temperature indicators, probe systems and environmental data loggers <sup>1</sup>  (UUTs reading by 0.01 °C) (UUTs reading by 0.1 °C) (UUTs reading by 1.0 °C)	  (-80 to 300) °C (-80 to 300) °C (-80 to 300) °C	  0.052 °C 0.079 °C 1.2 °C	Comparison to Temperature Chamber and Fluke Temperature Indicator
Temperature Indicators and probe systems <sup>1</sup>  (UUTs reading by 0.01 °C) (UUTs reading by 0.1 °C) (UUTs reading by 1.0 °C)	  (35 to 300) °C (35 to 375) °C (35 to 375) °C	  0.052 °C 0.58 °C 0.82 °C	Comparison to Fluke Drywell and Temperature Calibrator
Temperature Indicators and probe systems <sup>1</sup>  (UUTs reading by 0.01 °C) (UUTs reading by 0.1 °C) (UUTs reading by 1.0 °C)	  (-5 to 125) °C (-5 to 125) °C (-5 to 125) °C	  0.052 °C 0.74 °C 0.93 °C	Comparison to Fluke Temperature Bath and Temperature Calibrator
Temperature – Measure <sup>1</sup> (Ovens and Freezers)	(-195 to 1 260) °C	3.1 °C	Comparison to Fluke Series Process Calibrator, Thermocouples
Infrared Thermometers <sup>1</sup>	(0 to 35) °C (36 to 100) °C (100 to 350) °C (350 to 500) °C  (500) °C (501 to 800) °C (801 to 1 000) °C (1 001 to 1 150) °C	0.62 °C 1.0 °C 2.2 °C 2.9 °C  7.3 °C 9.6 °C 12 °C 13 °C	Comparison to Fluke 4181 IR Calibrator $\lambda = (8 \text{ to } 14) \mu\text{m}$ $\epsilon = (0.9 \text{ to } 1.0)$  Comparison to Cyclops C160L IR Calibrator $\lambda = (8 \text{ to } 14) \mu\text{m}$ $\epsilon = (0.98 \text{ to } 1.0)$
Uniformity Survey of Furnaces & Ovens	(0 to 250) °F (251 to 800) °F (801 to 1 300) °F	3.2 °F 4.1 °F 6.9 °F	In accordance with AMS2750 using a data logger and Type J Thermocouples

Calibration and Measurement Capability (CMC) is expressed in terms of the measurement parameter, measurement range, expanded uncertainty of measurement and reference standard, method, and/or equipment. The expanded uncertainty of measurement is expressed as the standard uncertainty of the measurement multiplied by a coverage factor of 2 ( $k=2$ ), corresponding to a confidence level of approximately 95%.

Notes:

1. On-site calibration service is available for this parameter, since on-site conditions are typically more variable than those in the laboratory, larger measurement uncertainties are expected on-site than what is reported on the accredited scope.
2.  $L$  = Length in inches,  $D$  = Diameter in inches
3. High Resolution Unmarked Scales include high resolution scales not complying with the accuracy class parameters of Table 3 of NIST Handbook 44.
4. Industrial Scales include but are not limited to lab balances, bench scales, floor scales, tank and hopper scales, and vehicle scales.
5. Antibus Scales & Systems, Inc has resident technicians located in Bowling Green, OH.
6. When the uncertainty of measurement is significantly impacted by the UUT's resolution, then the uncertainty may be expressed as a formula using the UUT's resolution, represented by "d"



Jason Stine, Vice President

