

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

Signal Instrumentation cc

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CALIBRATION

ISO/IEC 17025 Accreditation Granted: **15 October 2024**

Certificate Number: **L2423**

Certificate Expiry Date: **15 October 2028**

Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
DC Current – Source ¹	(0 to 50) mA	0.009 4 mA	Comparison to Process Calibrator
DC Current – Measure ¹	(0 to 50) mA	0.009 4 mA	Comparison to Process Calibrator
Resistance – Source ¹	(50 to 500) Ω (0.5 to 5) k Ω	0.26 Ω 0.002 8 k Ω	Comparison to Process Calibrator
Resistance – Measure ¹	(50 to 500) Ω (0.5 to 5) k Ω	0.26 Ω 0.002 8 k Ω	Comparison to Process Calibrator
RTD Temperature Simulation – Source and Measure ¹	PT100 385 Ω (-200 to 850) $^{\circ}\text{C}$ (-200 to 850) $^{\circ}\text{C}$	0.19 $^{\circ}\text{C}$ 0.19 $^{\circ}\text{C}$	Comparison to Process Calibrator
DC Voltage – Source ¹	(-20 to 200) mV (-0.2 to 2) V (-2 to 20) V	0.050 mV 0.47 mV 4.6 mV	Comparison to Process Calibrator
DC Voltage – Measure ¹	(-20 to 200) mV (-0.2 to 2) V (-2 to 20) V	0.050 mV 0.47 mV 4.6 mV	Comparison to Process Calibrator

Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Thermocouple Electrical Temperature Simulation – Source and Measure ¹	Type K (-200 to 1 370) °C	0.57 °C	Electrical Simulation using Process Calibrator
	Type J (-200 to 1 000) °C	0.56 °C	
	Type R/S (-50 to 1 760) °C	0.66 °C	

Mass and Mass Related

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Vacuum Instruments ¹	(-84 to 0) kPa	0.22 kPa	Comparison to CONST 211 Standard Digital Pressure Gauge
Pneumatic Gauge Pressure ¹	(0 to 2) MPa	0.31 kPa	Comparison to CONST 211 Standard Digital Pressure Gauge
	(2 to 4) MPa	0.52 kPa	
Hydraulic Gauge Pressure ¹	(0 to 70) MPa	30 kPa	Comparison to Additel Standard Digital Pressure Gauge
Barometric Pressure ¹	(-2.5 to 2.5) kPa	5.1 Pa	Comparison to Additel Standard Digital Pressure Gauge
Scales and Balances (Resolution > 0.01 g) ¹	(1 to 150) g	0.011 g	Comparison to OIML Class M1 Mass Pieces
	(0.15 to 2) kg	0.17 g	
	(2 to 5) kg	0.33 g	
	(5 to 10) kg	0.88 g	Comparison to OIML Class M1& M2 Mass Pieces
	(10 to 20) kg	1.4 g	
	(20 to 300) kg	0.081 kg	Comparison to OIML Class M2 Mass Pieces
	(300 to 600) kg	0.12 kg	

Mass and Mass Related

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Mass Pieces	0.001 g 0.002 g 0.005 g 0.01 g 0.02 g 0.05 g 0.1 g 0.2 g 0.5 g 1 g 2 g 5 g 10 g 20 g 50 g 100 g 200 g 500 g 1 kg 2 kg 5 kg 10 kg 20 kg	0.000 18 g 0.000 19 g 0.000 2 g 0.000 21 g 0.000 21 g 0.000 23 g 0.000 27 g 0.000 32 g 0.000 37 g 0.000 5 g 0.000 6 g 0.000 7 g 0.000 8 g 0.001 g 0.001 3 g 0.002 g 0.004 7 g 0.022 g 0.039 g 0.058 g 0.033 g 0.72 g 1.4 g	Comparison to OIML Class M1& M2 Mass Pieces

Thermodynamic

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Humidity – Relative Humidity Measuring Devices	(10 to 90) %RH @ (23 ±5) °C	1.4 %RH	Comparison to Reference Hygrometer
Humidity Uniformity Surveys ¹ Chambers, Cold rooms, Incubators	(10 to 90) %RH	2.0 %RH	Comparison to Reference Dataloggers
IR Thermometry Measuring Equipment ¹	(50 to 200) °C (200 to 500) °C	2.6 °C 6.1 °C	Comparison to Portable IR Calibrator $\lambda = (8 \text{ to } 14) \mu\text{m}$, $\varepsilon = 0.95$

Thermodynamic

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Digital and Mechanical Thermometry Systems ¹	0 °C	0.028 °C	Comparison to Reference PRT with Ice Point
	-21 °C	0.09 °C	Comparison to PRT with H ₂ O/NaCl slurry
	(-30 to 0) °C (0 to 150) °C	0.045 °C 0.051 °C	Comparison to PRT with Wika Micro Calibration Bath
Digital and Mechanical Thermometry Systems ¹	(40 to 150) °C (150 to 300) °C (300 to 600) °C	0.040 °C 0.053 % of reading 0.050 % of reading	Comparison to Wika Dry block calibrator
	(-40 to 150) °C	0.23 °C	Comparison to Additel 875 Dry Well Calibrator
Liquid in Glass Thermometers (Partial immersion) ¹	(-30 to 0) °C (0 to 150) °C	0.084 °C 0.082 °C	Comparison to Reference PRT and Baths
Dry Block Calibrator	(-40 to 0) °C (0 to 150) °C (150 to 300) °C	0.068 °C 0.051 °C 0.055 % of reading	Comparison to Digital thermometer with Pt100 – Testo 735
Temperature - System Accuracy Test – Temperature Chambers, Cold rooms, Incubators, Autoclaves and Retorts ¹	(-30 to 150) °C	0.10 °C	Comparison to Reference PRT
	(10 to 80) °C	0.76 °C	Comparison to Reference Dataloggers

Time and Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Frequency – Source or Measure ¹	(1 to 200) Hz (200 to 2 000) Hz (2 000 to 20 000) Hz	0.033 Hz 0.25 Hz 2.4 Hz	Comparison to Process Calibrator



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.

