CERTIFICATE OF ACCREDITATION

The ANSI National Accreditation Board

Hereby attests that

FCx Services

10345B Nations Ford Road
Charlotte, NC 28273

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.

Jason Stine, Vice President

Expiry Date: 18 December 2027

Certificate Number: AC-2611

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

FXc Services

10345B Nations Ford Road
Charlotte, NC 28273

Tony Hagwood 800-532-0415

CALIBRATION

ISO/IEC 17025 Accreditation Granted: **10 December 2025**

Certificate Number: **AC-2611** Certificate Expiry Date: **18 December 2027**

Chemical Quantities

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
pH Meters / Transmitters	4 pH 7 pH 10 pH	0.05 pH 0.05 pH 0.05 pH	Comparison to Standard Aqueous Solutions
Conductivity Meters	10 µS/cm 100 µS/cm 1 413 µS/cm 10 000 µS/cm 100 000 µS/cm	0.64 µS/cm 2.3 µS/cm 7.6 µS/cm 40 µS/cm 450 µS/cm	
Gas Meters	100 ppm H_2S 500 ppm CO 100 % LEL 40 % O_2	2.5 ppm H_2S 5.9 ppm CO 5.7 % LEL 1.1 % O_2	Comparison to Certified Gasses

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Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
DC Current	(0 to 30) mA (0 to 110) mA	0.004 mA 0.04 mA	Comparison to Fluke Process Calibrator
Resistance Measure	(0 to 10) Ω (0 to 100) Ω (0 to 1.0) kΩ (0 to 10) kΩ	0.09 Ω 0.12 Ω 1.2 Ω 23 Ω	Comparison to Fluke Process Calibrator
Resistance Source	(0 to 10) Ω (0 to 100) Ω (0 to 1.0) kΩ (0 to 10) kΩ	0.09 Ω 0.12 Ω 1.2 Ω 23 Ω	Comparison to Fluke Process Calibrator

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Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
RTD Resistance Measure	100 Ω Pt (3926)		Comparison to Fluke Process Calibrator
	(-200 to 0) °C	0.66 °C	
	(0 to 630) °C	0.54 °C	
	100 Ω Pt (385)		
	(-200 to -100) °C	0.69 °C	
	(-100 to 800) °C	0.53 °C	
	120 Ω Ni (672)		
	(-200 to 260) °C	0.56 °C	
	200 Ω Pt (385)		
	(-200 to 100) °C	0.53 °C	
	(100 to 630) °C	0.65 °C	
	500 Ω Pt (385)		
	(-200 to 100) °C	0.53 °C	
	(100 to 630) °C	0.65 °C	
	1 000 Ω Pt (385)		
	(-200 to 100) °C	0.53 °C	
	(100 to 630) °C	0.65 °C	
	10 Ω Cu (427)		
	(-100 to 260) °C	0.68 °C	
	100 Ω Pt (3916)		
	(-200 to 100) °C	0.65 °C	
	(100 to 630) °C	0.65 °C	

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Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
RTD Resistance Simulation	100 Ω Pt (3926) (-200 to 100) °C (0 to 630) °C 100 Ω Pt (385) (-200 to 100) °C (0 to 400) °C (400 to 800) °C (100 to 800) °C 120 Ω Ni (672) (-200 to 260) °C (-80 to 260) °C 200 Ω Pt (385) (-200 to 100) °C (100 to 630) °C (0 to 400) °C 500 Ω Pt (385) (-200 to 100) °C (100 to 630) °C (0 to 400) °C	 0.06 °C 0.31 °C 0.06 °C 0.31 °C 0.05 °C 0.16 °C 0.24 °C 0.05 °C 0.07 °C 0.18 °C 0.31 °C 0.07 °C 0.18 °C 0.31 °C	Comparison to Fluke Process Calibrator
RTD Resistance Simulation	1000 Ω Pt (385) (-200 to 100) °C (100 to 630) °C (0 to 400) °C 10 Ω Cu (427) (-100 to 260) °C 100 Ω Pt (3916) (-200 to -190) °C (-190 to 0) °C (0 to 630) °C (100 to 630) °C (-200 to 100) °C	 0.07 °C 0.18 °C 0.31 °C 0.24 °C 0.38 °C 0.21 °C 0.31 °C 0.13 °C 0.06 °C	Comparison to Fluke Process Calibrator
DC Voltage	(0 to 110) mV (0 to 1.1) V (0 to 11) V (0 to 300) V	0.051 mV 0.002 V 0.004 V 0.23 V	Comparison to Fluke Process Calibrator
Current Simulation of Fischer Porter Velocity Meters	(0 to 20) mA	0.19 ma	Simulation using Mag X Flow Simulator

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Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Current Simulation of Capacitance Level	(0 to 20) mA	0.048 ma	Simulation using Drexelbrook Level Simulator
AC Voltage – Measure Only	(0 to 1.1) VAC		Comparison to Fluke Process Calibrator
	(20 to 40) Hz	0.026 V	
	(40 to 500) Hz	0.007 V	
	(0.5 to 1) kHz	0.026 V	
	(1 to 5) kHz	0.13 V	
	(1.1 to 11) VAC		
	(20 to 40) Hz	0.26 V	
	(40 to 500) Hz	0.068 V	
	(0.5 to 1) kHz	0.26 V	
	(1 to 5) kHz	0.27 V	
	(11 to 110) VAC		
	(20 to 40) Hz	2.6 V	
	(40 to 500) Hz	0.68 V	
	(0.5 to 1) kHz	2.6 V	
	(1 to 5) kHz	12 V	
	(110 to 300) VAC		
	(20 to 40) Hz	7.9 V	
	(40 to 500) Hz	2.3 V	
	(0.5 to 1) kHz	7.9 V	
	(1 to 5) kHz	36 V	

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Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Thermocouple Millivolt Simulation	Type E		Comparison to Fluke Process Calibrator
	(-250 to -200) °C	0.9 °C	
	(-200 to -100) °C	0.6 °C	
	(-100 to 600) °C	0.5 °C	
	(600 to 1 000) °C	0.6 °C	
	Type N		
	(-200 to -100) °C	1.5 °C	
	(-100 to 900) °C	1.1 °C	
	(900 to 1 300) °C	1.4 °C	
	Type J		
	(-210 to -100) °C	0.48 °C	
	(-100 to 800) °C	0.37 °C	
	(800 to 1 200) °C	0.6 °C	
	Type K		
	(-200 to -100) °C	0.72 °C	
	(-100 to 400) °C	0.64 °C	
	(400 to 1 200) °C	0.7 °C	
	(1 200 to 1 372) °C	0.58 °C	
	Type T		
	(-250 to -200) °C	1.2 °C	
	(-200 to 0) °C	0.61 °C	
	(0 to 400) °C	0.51 °C	
	Type B		
	(600 to 800) °C	1.3 °C	
	(800 to 1 000) °C	1.2 °C	
	(1 000 to 1 820) °C	1.1 °C	
	Type R		
	(-20 to 0) °C	1.7 °C	
	(0 to 100) °C	1.6 °C	
	(100 to 1 767) °C	1.3 °C	
	Type S		
	(-20 to 0) °C	1.6 °C	
	(0 to 200) °C	1.4 °C	
	(200 to 1 400) °C	1.3 °C	
	(1 400 to 1 767) °C	1.3 °C	
	Type C		
	(0 to 800) °C	0.9 °C	
	(800 to 1 200) °C	1.2 °C	
	(1 200 to 1 800) °C	1.4 °C	
	(1 800 to 2 316) °C	2 °C	

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Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Thermocouple Millivolt Simulation	Type L (-200 to -100) °C (-100 to 800) °C (800 to 900) °C Type U (-200 to 0) °C (0 to 600) °C	 0.6 °C 0.54 °C 0.67 °C 0.72 °C 0.65 °C	Comparison to Fluke Process Calibrator

Length – Dimensional Metrology

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
OD / ID Micrometer	(0 to 18) in	(54 + 31*L*) µin	Comparison to Gage Blocks
Caliper	(0 to 18) in	(188 + 29*L*) µin	
Dial Indicator	(0 to 4) in	(55 + 60*L*) µin	
Length/Distance Measurement	(0 to 192) in	0.038 in	Comparison to Certified Tape Measure

Mass and Mass Related

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Pressure Measure	(0 to 1) inH_2O @ 60 °F (0 to 10) inH_2O @ 60 °F	0.02 inH_2O 0.02 inH_2O	Comparison to Fluke 700P (series) Pressure Modules
Pressure Measure (psi Differential)	(0 to 5) psid (-5 to 5) psid	0.006 psi 0.014 psi	

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Mass and Mass Related

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Pressure Measure (psi Gauge)	(0 to 1) psi (0 to 15) psi (0 to 30) psi (0 to 100) psi (0 to 300) psi (0 to 500) psi (0 to 1 000) psi (0 to 5 000) psi (0 to 10 000) psi	0.002 psi 0.012 psi 0.024 psi 0.08 psi 0.2 psi 0.3 psi 0.8 psi 4.2 psi 7.5 psi	Comparison to Fluke 700P (series) Pressure Modules
Pressure Measure (psi Gauge)	(0 to 10 000) psi	7.9 psi	Comparison to Druck DPI 104 Pressure Gauge
Vacuum Measure	(-10 to 0) psiv	0.086 psi	Comparison to Fluke 700PV4 Pressure Module
	(-15 to 30) psiv	0.04 psi	Comparison to Fluke 700PD5 Pressure Module
Weighing Systems Analytical Balance / Balance (0.000 1 g Resolution) (0.001 g Resolution)	(0 to 100) g (0 to 400) g	0.37 mg 1.5 mg	Comparison to ASTM E617 Class 1 Masses
Weighing Systems Analytical Balance / Balance (0.1 g Resolution) (1 g Resolution)	(0 to 500) g (0 to 4) kg	58 mg 0.58 g	Comparison to ASTM E617 Class 2 Masses

Thermodynamic

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Relative Humidity	(0 to 95) %RH (10 to 95) %RH	2.1 %RH 1.7 %RH	Comparison to a Reference Hygrometer and Probe
Temperature – Measuring Equipment	(14 to 104) °F	0.6 °F	
Temperature	(-196 to 300) °C	1.1°C	Comparison to SPRT with Fluke 754

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Time and Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Rotational Speed	(0.1 to 999.9) RPM (1 000 to 9 999.9) RPM (10 000 to 25 000) RPM	0.08 RPM 0.77 RPM 2.4 RPM	Comparison to Tachometer
Frequency (Measure)	(1 to 109.99) Hz (110 to 1 100) Hz (1.1 to 11) kHz (11 to 50) kHz	0.058 Hz 0.58 Hz 0.006 kHz 0.057 kHz	Comparison to Fluke Process Calibrator
Frequency (Source)	(0 to 10.99) Hz (11 to 110) Hz (110 to 1 100) Hz (1.1 to 22) kHz (22 to 50) kHz	0.014 Hz 0.11 Hz 0.14 Hz 0.002 kHz 0.006 kHz	Comparison to Fluke Process Calibrator
Stopwatch / Timers	3 600 s	0.87 s	Comparison to Stopwatch

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 all parameters listed, since on-site conditions are variable, larger measurement uncertainties are expected where conditions are outside those reported on the accredited scope.
2. L = length in inches
3. FCx Performance is the legal entity doing business as FCx Services.

Jason Stine, Vice President

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