CERTIFICATE OF ACCREDITATION

The ANSI National Accreditation Board

Hereby attests that

QRS Calibrations, LLC dba QRS Solutions
4501 Waldemar Street
Haltom City, TX 76177

Fulfills the requirements of

ISO/IEC 17025:2017

and national standard

ANSI/NCSL Z540-1-1994 (R2002)

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: 08 December 2026

Certificate Number: AC-2931

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

AND

ANSI/NCSL Z540-1-1994 (R2002)

QRS Calibrations, LLC dba QRS Solutions

4501 Waldemar Street
Haltom City, TX 76117
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CALIBRATION

Valid to: **December 8, 2026** Certificate Number: **AC-2931**

Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Capacitance – Source [1] (Fixed Points)	1 kHz 1 nF 2 nF 5 nF 10 nF 100 nF 1 µF 10 µF	 2.6 pF 5.3 pF 15 pF 64 pF 0.64 nF 7.1 nF 85 nF	Transmille Multiproduct Calibrator
Capacitance – Source [1] (Simulation)	1 kHz (0.95 to 9.5) µF (9.5 to 95) µF 95 µF to 0.95 mF (0.95 to 9.5) mF (9.5 to 100) mF	 9.4 nF/µF + 0.11 nF 23 pF/µF + 89 nF 7.9 µF/mF 7.2 µF/mF 7.1 µF/mF + 0.6 µF	Transmille Multiproduct Calibrator
Capacitance – Measure [1]	1 kHz (1 to 100) nF (1 to 10) µF	 5.3 % of reading + 0.53 nF 0.47 % of reading + 5.3 nF	LCR Meter

Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
AC Current – Source [1]	(20 to 202) µA		Transmille Multiproduct Calibrator
	(10 to 45) Hz	2 mA/A + 0.25 µA	
	45 Hz to 1 kHz	0.7 mA/A + 0.15 µA	
	(1 to 10) kHz	8 mA/A + 0.25 µA	
	(10 to 30) kHz	16 mA/A + 0.4 µA	
	(0.2 to 2.02) mA		
	(10 to 45) Hz	2 mA/A + 0.25 µA	
	45 Hz to 1 kHz	0.6 µA + 0.2 µA	
	(1 to 10) kHz	5 mA/A + 0.3 µA	
	(10 to 30) kHz	10 mA/A + 0.6 µA	
	(2 to 20.2) mA		
	(10 to 45) Hz	2 mA/A + 0.25 µA	
	45 Hz to 1 kHz	0.7 mA/A + 0.15 µA	
	(1 to 10) kHz	8 mA/A + 0.25 µA	
	(10 to 30) kHz	16 mA/A + 0.4 µA	
	(20 to 202) mA		
	(10 to 45) Hz	2 mA/A + 0.25 µA	
	45 Hz to 1 kHz	0.6 mA/A + 0.2 µA	
	(1 to 10) kHz	5 mA/A + 0.3 µA	
	(10 to 30) kHz	10 mA/A + 0.6 µA	
	(0.2 to 2.02) A		
	(10 to 45) Hz	2 mA/A + 0.3 mA	
	45 Hz to 1 kHz	0.6 mA/A + 0.2 mA	
	(1 to 5) kHz	5 mA/A + 0.4 mA	
	(5 to 10) kHz	6 mA/A + 1 mA	
	(10 to 30) kHz	25 mA/A + 5 mA	
	(2 to 30) A		
	(10 to 45) Hz	2 mA/A + 3 mA	
	(45 to 100) Hz	0.8 mA/A + 2 mA	
	100 Hz to 1 kHz	3 mA/A + 4 mA	
	(1 to 5) kHz	6 mA/A + 4 mA	
	(5 to 10) kHz	30 mA/A + 5 mA	
AC Current – Source [1] (Clamp-on Meters)			Transmille Multiproduct Calibrator w/ Clamp Coil Adaptor
2-turn Coil			
Wound Clamps	(30 to 60) Hz		
	Up to 60 A	3.7 mA/A + 10 mA	
Hall-effect Clamps	(30 to 60) Hz		
	Up to 60 A	4.9 mA/A + 72 mA	

Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
AC Current – Source [1] (Clamp-on Meters) 10-turn Coil Wound Clamps	(30 to 60) Hz Up to 300 A	4.2 mA/A + 12 mA	Transmille Multiproduct Calibrator w/ Clamp Coil Adaptor
Hall-effect Clamps	(30 to 60) Hz Up to 300 A	6 mA/A + 0.11 A	
AC Current – Source [1] (Clamp-on Meters) 50-turn Coil Wound Clamps	(30 to 60) Hz Up to 1 500 A	2.6 mA/A + 42 mA	Transmille Multiproduct Calibrator w/ Clamp Coil Adaptor
Hall-effect Clamps	(30 to 60) Hz Up to 1 500 A	4.6 mA + 0.42 A	
AC Current – Measure [1]	Up to 100 µA		Transmille 8.5 Digit Multimeter
	(10 to 40) Hz	0.9 mA/A + 15 nA	
	40 Hz to 1 kHz	0.5 mA/A + 12 nA	
	(1 to 10) kHz	1.2 mA/A + 30 nA	
	(0.1 to 1) mA		
	(10 to 40) Hz	0.9 mA/A + 0.15 µA	
	40 Hz to 1 kHz	0.5 mA/A + 0.12 µA	
	(1 to 10) kHz	1.2 mA/A + 0.3 µA	
	(1 to 10) mA		
	(10 to 40) Hz	0.9 mA/A + 1.5 µA	
	40 Hz to 1 kHz	0.5 mA/A + 1.2 µA	
	(1 to 10) kHz	1.2 mA/A + 3 µA	
	(10 to 100) mA		
	(10 to 40) Hz	0.9 mA/A + 15 µA	
	40 Hz to 1 kHz	0.5 mA/A + 12 µA	
	(1 to 10) kHz	1.2 mA/A + 30 µA	
	(0.1 to 1) A		
	(10 to 40) Hz	1.1 mA/A + 0.2 mA	
	40 Hz to 1 kHz	0.7 mA/A + 0.15 mA	
	(1 to 10) kHz	1.3 mA/A + 0.5 mA	
	(1 to 10) A		
	(10 to 40) Hz	1.6 mA/A + 4 mA	
	40 Hz to 1 kHz	1.2 mA/A + 3 mA	
	(10 to 30) A		
	(10 to 40) Hz	1.6 mA/A + 12 mA	
	40 Hz to 1 kHz	1.2 mA/A + 9 mA	

Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
DC Current – Source [1]	(0 to 202) µA (0.2 to 2.02) mA (2 to 20.2) mA (20 to 202) mA (0.2 to 2.02) A (2 to 20.2) A (20 to 30) A	0.1 mA/A + 10 nA 50 µA/A + 30 nA 50 µA/A + 0.2 µA 50 µA/A + 2 µA 0.13 mA/A + 30 µA 0.3 mA/A + 0.3 mA 0.5 mA/A + 0.45 mA	Transmille Multiproduct Calibrator
DC Current – Source [1] (Clamp-on Meters) 2-turn Coil Hall-effect Clamps	(0 to 60) A	4.9 mA/A + 72 mA	Transmille Multiproduct Calibrator w/ Clamp Coil Adaptor
DC Current – Source [1] (Clamp-on Meters) 10-turn Coil Hall-effect Clamps	(0 to 300) A	6 mA/A + 0.11 A	Transmille Multiproduct Calibrator w/ Clamp Coil Adaptor
DC Current – Source [1] (Clamp-on Meters) 50-turn Coil Hall-effect Clamps	(0 to 1 500) A	4.6 mA/A + 0.42 A	Transmille Multiproduct Calibrator w/ Clamp Coil Adaptor
DC Current – Measure [1]	(0 to 10) nA (10 to 100) nA (0.1 to 1) µA (1 to 10) µA (10 to 100) µA (0.1 to 1) mA (1 to 1) mA (10 to 100) mA (0.1 to 1) A (1 to 10) A (10 to 30) A	0.86 nA 0.6 mA/A + 0.85 nA 24 µA/A + 0.91 nA 18 µA/A + 0.92 nA 13 µA/A + 0.97 nA 22 µA/A + 0.14 nA 1.8 mA/A – 1.8 µA 16 µA 0.31 mA/A – 25 µA 0.73 mA/A – 0.45 mA 1.3 mA/A – 5.7 mA	Transmille 8.5 Digit Multimeter
Inductance – Source [1] (Simulation)	1 kHz (1 to 100) mH (1 to 10) H	28 µH/H + 56 µH 1 mH/H – 0.3 mH	Transmille Multiproduct Calibrator
Inductance – Measure [1]	1 kHz (1 to 100) mH (1 to 10) H	0.059 % of reading + 5.3 µH 0.81 % of reading	LCR Meter

Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Resistance – Source [1] (Fixed Points) 4-wire Configuration	0.1 Ω 1 Ω 10 Ω 100 Ω 1 kΩ 10 kΩ 100 kΩ	7.1 mΩ 7.1 mΩ 7.3 mΩ 9.3 mΩ 32 mΩ 0.21 Ω 7.4 Ω	Transmille Multiproduct Calibrator
Resistance – Source [1] (Fixed Points) 2-wire Configuration	1 MΩ 10 MΩ 100 MΩ 1 GΩ	40 Ω 1.3 kΩ 230 kΩ 13 MΩ	Transmille Multiproduct Calibrator
Resistance – Source [1] (Simulated)	(0 to 100) Ω (100 to 330) Ω (0.33 to 1) kΩ (1 to 3.3) kΩ (3.3 to 10) kΩ (10 to 33) kΩ (33 to 100) kΩ (100 to 330) kΩ (0.33 to 1) MΩ (1 to 3.3) MΩ (3.3 to 10) MΩ (10 to 33) MΩ (33 to 100) MΩ (100 to 330) MΩ (0.33 to 1) GΩ	0.1 mΩ/Ω + 5 mΩ 0.1 mΩ/Ω + 52 mΩ 0.2 mΩ/Ω + 30 mΩ 0.1 mΩ/Ω + 89 mΩ 0.2 mΩ/Ω - 44 mΩ 0.1 mΩ/Ω + 0.37 Ω 0.2 mΩ/Ω – 0.9 Ω 0.1 mΩ/Ω + 3.2 Ω 0.2 mΩ/Ω – 9.2 Ω 0.1 mΩ/Ω + 19 Ω 0.2 mΩ/Ω – 79 Ω 0.5 mΩ/Ω – 3.7 kΩ 2.1 mΩ/Ω – 51 kΩ 16 mΩ/Ω – 1.4 MΩ 27 mΩ/Ω – 48 MΩ	Transmille Multiproduct Calibrator
Resistance – Measure [1]	(0 to 1) Ω (1 to 10) Ω (10 to 100) Ω (0.1 to 1) kΩ (1 to 10) kΩ (10 to 100) kΩ (0.1 to 1) MΩ (1 to 10) MΩ	38 µΩ/Ω + 10 µΩ 21.3 µΩ/Ω + 27 µΩ 17.3 µΩ/Ω + 67 µΩ 14.3 µΩ/Ω + 1.7 mΩ 18.7 µΩ/Ω + 3.3 mΩ 33 µΩ/Ω + 11 mΩ 24 µΩ/Ω + 0.9 Ω 46 µΩ/Ω – 21 Ω	Transmille 8.5 Digit Multimeter

Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Resistance – Measure [1] (Electrometer Function) 2-wire Configuration	50 V (5 to 10) MΩ (10 to 100) MΩ (0.1 to 1) GΩ 1 GΩ to 1 TΩ 100 V (8 to 10) MΩ (10 to 100) MΩ (0.1 to 1) GΩ 1 GΩ to 1 TΩ	 2 kΩ 0.7 mΩ/Ω – 4.9 kΩ 2.8 mΩ/Ω – 218 kΩ 33 mΩ/Ω – 30.4 kΩ 2 kΩ 0.63 mΩ/Ω – 4.3 kΩ 2.8 mΩ/Ω – 223 kΩ 6 mΩ/Ω – 3.4 MΩ	Transmille 8.5 Digit Multimeter
Resistance – Measure [1] (Electrometer Function) 2-wire Configuration	150 V (12 to 100) MΩ (0.1 to 1) GΩ (1 to 10) GΩ 10 GΩ to 1 TΩ 200 V (20 to 100) MΩ (0.1 to 1) GΩ (1 to 10) GΩ 10 GΩ to 1 TΩ 250 V (25 to 100) MΩ (0.1 to 1) GΩ (1 to 10) GΩ 10 GΩ to 1 TΩ 300 V (30 to 100) MΩ (0.1 to 1) GΩ (1 to 10) GΩ 10 GΩ to 1 TΩ	 19 kΩ 0.7 mΩ/Ω – 51 kΩ 3 mΩ/Ω – 2.9 MΩ 25.2 mΩ – 225 MΩ 19 kΩ 0.7 mΩ/Ω – 47 kΩ 2.8 mΩ/Ω – 2.2 MΩ 21.2 mΩ/Ω – 186 MΩ 19 kΩ 0.7 mΩ/Ω – 47 kΩ 2.8 mΩ/Ω – 2.2 MΩ 19.2 mΩ/Ω – 166 MΩ 19 kΩ 0.7 mΩ/Ω – 44.4 kΩ 3 mΩ/Ω – 2.2 MΩ 17 mΩ/Ω – 16.5 MΩ	Transmille 8.5 Digit Multimeter

Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Electrical Simulation of RTD Indicating Devices – Source (Passive) [1]			
2-wire Configuration	Pt 100		
	-100 °C	0.007 °C	Transmille Multiproduct Calibrator
	0 °C	0.011 °C	
	30 °C	0.014 °C	
	60 °C	0.015 °C	
	100 °C	0.016 °C	
	200 °C	0.02 °C	
	300 °C	0.027 °C	
	800 °C	0.074 °C	
Electrical Simulation of RTD Indicating Devices – Measure [1]			
4-wire Configuration			
Normal Current Mode	Pt 100		Transmille Multiproduct Calibrator
	(-100 to 0) °C	0.002 % of reading + 0.003 °C	
	(0 to 800) °C	0.005 % of reading + 0.003 °C	
Low Current Mode			
	(-100 to 0) °C	0.005 % of reading + 0.007 °C	
	(0 to 800) °C	0.006 % of reading + 0.007 °C	
AC Voltage – Source [1]	Up to 202 mV		Transmille Multiproduct Calibrator
	(10 to 45) Hz	0.8 mV/V + 15 µV	
	45 Hz to 1 kHz	0.16 mV/V + 15 µV	
	(1 to 20) kHz	200 µV/V + 28 µV	
	(20 to 100) kHz	1 mV/V + 40 µV	
	(100 to 500) kHz	4 mV/V + 0.1 mV	
	200 mV to 2.02 V		
	(10 to 45) Hz	0.5 mV/V + 0.18 mV	
	45 Hz to 1 kHz	0.16 m V/V + 0.12 mV	
	(1 to 20) kHz	0.21 mV/V + 0.18 mV	
	(20 to 100) kHz	0.65 mV/V + 0.3 mV	
	(0.1 to 1) MHz	3 mV/V + 0.45 mV	
	(2 to 20.2) V		
	(10 to 45) Hz	0.5 mV/V + 1.6 mV	
	45 Hz to 1 kHz	0.16 mV/V + 1 mV	
	(1 to 20) kHz	0.21 mV/V + 1.6 mV	
	(20 to 100) kHz	0.6 mV/V + 3 mV	

Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
AC Voltage – Source [1]	(20 to 202) V		Transmille Multiproduct Calibrator
	(10 to 45) Hz	0.5 mV/V + 20 mV	
	45 Hz to 1 kHz	0.15 mV/V + 12 mV	
	(1 to 10) kHz	0.2 mV/V + 16 mV	
	(10 to 40) kHz	0.3 mV/V + 30 mV	
	(40 to 100) kHz	2 mV/V + 50 mV	
	(200 to 1 020) V		
	(10 to 45) Hz	0.55 mV/V + 0.2 V	
	45 Hz to 1 kHz	0.2 mV/V + 60 mV	
	(1 to 20) kHz	0.25 mV/V + 0.12 V	
	(20 to 100) kHz	0.3 mV/V + 0.2 V	
AC Voltage – Measure [1]	900 Hz		Fluke True RMS Voltmeter
	0.159 V	0.56 mV	
	0.318 V	1.1 mV	
	0.955 V	3 mV	
	1.909 V	5.9 mV	
	3.359 V	12 mV	
	250 kHz		
	0.159 V	0.72 mV	
	0.2 V	0.87 mV	
	400 kHz		
	0.159 V	0.72 mV	
	0.318 V	1.4 mV	
	0.955 V	4 mV	
	1.909 V	8 mV	
	3.359 V	15 mV	
	1 MHz		
	0.159 V	0.72 nV	
	0.318 V	1.4 mV	
	0.955 V	4 mV	
	1.909 V	8 mV	
	3.359 V	15 mV	
	3 MHz		
	0.159 V	2.8 mV	
	0.2 V	3.5 mV	
	5 MHz		
	0.159 V	2.8 mV	
	0.318 V	5.6 mV	
	0.955 V	17 mV	
	1.909 V	33 mV	
	3.359 V	59 mV	

Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
AC Voltage – Measure [1]	8 MHz 0.159 V 0.2 V	 2.8 mV 3.5 mV	Fluke True RMS Voltmeter
AC Voltage – Measure [1]	Up to 105 mV (10 to 40) Hz (40 to 200) Hz 200 Hz to 1 kHz (1 to 2) kHz (2 to 20) kHz (20 to 100) kHz 105 mV to 1.05 V (10 to 40) Hz (40 to 200) Hz 200 Hz to 1 kHz (1 to 2) kHz (2 to 20) kHz (20 to 100) kHz 100 kHz to 1 MHz (1.05 to 10.5) V (10 to 40) Hz (40 to 200) Hz 200 Hz to 1 kHz (1 to 2) kHz (2 to 20) kHz (20 to 100) kHz (100 to 500) kHz (10.5 to 105) V (10 to 40) Hz (40 to 200) Hz 200 Hz to 1 kHz (1 to 2) kHz (2 to 20) kHz (20 to 50) kHz (105 to 1 050) V (10 to 40) Hz (40 to 200) Hz 200 Hz to 1 kHz (1 to 2) kHz (2 to 10) kHz	 0.8 mV/V + 0.15 mV 0.3 mV/V + 9 µV 0.3 mV/V + 8 µV 0.3 mV/V + 8 µV 0.4 mV/V + 10 µV 0.9 mV/V + 50 µV 0.6 mV/V + 0.15 mV 0.3 mV/V + 60 µV 0.2 mV/V + 60 µV 0.2 mV/V + 60 µV 0.4 mV/V + 0.1 mV 0.9 mV/V + 0.5 mV 15.6 mV/V + 25 mV 0.6 mV/V + 1.5 mV 0.3 mV/V + 0.6 mV 0.2 mV/V + 0.6 mV 0.2 mV/V + 0.6 mV 0.4 mV/V + 1 mV 0.9 mV/V + 5 mV 15.6 mV/V + 0.25 V 0.8 mV/V + 15 mV 0.3 mV/V + 9 mV 0.3 mV/V + 7 mV 0.3 mV/V + 7 mV 0.5 mV/V + 10 mV 1.2 mV/V + 50 mV 0.8 mV/V + 0.15 V 0.3 mV/V + 90 mV 0.3 mV/V + 70 mV 0.3 mV/V + 70 mV 0.5 mV/V + 0.1 V	Transmille 8.5 Digit Multimeter

Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
DC Voltage – Source [1]	(0 to 202) mV (0.2 to 2.02) V (2 to 20.2) V (20 to 202) V (200 to 1 025) V	15 µV/V + 2 µV 9 µV/V + 2.5 µV 8 µV/V + 24 µV 12 µV/V + 0.24 mV 12 µV/V + 2.4 mV	Transmille Multiproduct Calibrator
DC Voltage – Measure [1]	(0 to 120) mV (0.12 to 1.2) V (1.2 to 12) V (12 to 120) V (120 to 1 050) V	9 µV/V + 0.17 µV 6.4 µV/V + 0.6 µV 6.8 µV/V + 6 µV 9.5 µV/V + 80 µV 9.5 µV/V + 1.2 mV	Transmille 8.5 Digit Multimeter
Electrical Simulation of Thermocouple Indicators – Source [1]	Type B (600 to 800) °C (800 to 1 000) °C (1 000 to 1 550) °C (1 550 to 1 820) °C Type C (0 to 150) °C (150 to 650) °C (650 to 1 000) °C (1 000 to 1 800) °C Type E -250 to -100°C -100 to -25°C (-25 to 350) °C (350 to 650) °C (650 to 1 000) °C Type J (-210 to -100) °C (-100 to -30) °C (-30 to 150) °C (150 to 760) °C (760 to 1 200) °C Type K (-200 to -100) °C (-100 to -25) °C (-25 to 120) °C (120 to 1000) °C (1 000 to 1 370) °C Type L (-200 to -100) °C (-100 to 800) °C (800 to 900) °C	 0.89 °C 0.78 °C 0.65 °C 0.66 °C 0.38 °C 0.33 °C 0.39 °C 0.56 °C 0.59 °C 0.13 °C 0.12 °C 0.15 °C 0.18 °C 0.28 °C 0.14 °C 0.12 °C 0.17 °C 0.23 °C 0.33 °C 0.19 °C 0.14 °C 0.24 °C 0.31 °C 0.41 °C 0.39 °C 0.4 °C	Transmille Multiproduct Calibrator w/ Thermocouple Adapter

Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Electrical Simulation of Thermocouple Indicators – Source [1]	Type N (-200 to -100) °C (-100 to -25) °C (-25 to 120) °C (120 to 410) °C (410 to 1 300) °C Type R (0 to 250) °C (250 to 1 000) °C (1 000 to 1 760) °C Type S (0 to 250) °C (250 to 1 000) °C (1 000 to 1 760) °C Type T (-250 to -150) °C (-150 to 0) °C (0 to 120) °C (120 to 400) °C Type U (-200 to 0) °C (0 to 600) °C	 0.51 °C 0.25 °C 0.2 °C 0.19 °C 0.19 °C 0.98 °C 0.53 °C 0.62 °C 0.98 °C 0.53 °C 0.62 °C 0.72 °C 0.13 °C 0.12 °C 0.14 °C 0.5 °C 0.36 °C	Transmille Multiproduct Calibrator w/ Thermocouple Adapter
Electrical Simulation of Thermocouple Indicators – Measure [1]	Type B (300 to 500) °C (500 to 1 820) °C Type E (0 to 800) °C Type J (-210 to 1 200) °C Type K (-140 to 1 340) °C Type N (-200 to 1 300) °C Type R (-50 to 600) °C (600 to 1 760) °C Type S (0 to 1 760) °C Type T (-200 to 400) °C	 0.3 °C 0.18 °C 0.07 °C 0.11 °C 0.11 °C 0.11 °C 0.59 °C 0.22 °C 0.18 °C 0.11 °C	Transmille 8.5 Digit Multimeter

Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Oscilloscopes [1]			Transmille Multiproduct Calibrator w/ Scope Pak
Amplitude – DC			
1 MΩ load	2 mV to 50 V	5.8 mV/V + 0.18 mV	
Amplitude – Square Wave			
1 MΩ load	1 kHz		
	2 mVp-p to 50 mVp-p	0.13 mV/V + 34 µV	
Time Markers			
1 MΩ load	(20 to 500) ns	0.000 3 % of reading + 1.3 ps	
	500 ns to 50 µs	0.002 % of reading – 11 ps	
	50 µs to 5 ms	0.15 % of reading	
	(5 to 100) ms	3.3 % of reading	
	100 ms to 1 s	36 % of reading	
Bandwidth Sinewave (50 kHz Reference)			
50 Ω load	600 mVp-p		
	(5 to 350) MHz	4.6 mV	
Rise Time			
50 Ω load	≤ 1 ns	1.5 ns	

Mass and Mass Related

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Pressure Devices	(-12 to -0.7) psig	0.024 % of reading + 0.000 5 psi	DH-Budenberg Deadweight Tester
	(0.7 to 15) psig	0.025 % of reading + 0.000 4 psi	
	(10 to 400) psig	0.033 % of reading + 0.000 4 psi	

Thermodynamic

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Temperature – Source/Measure [1]	(-75 to -38) °C	0.033 °C	Comparison to Isotech Precision Thermometer w/ PRT Probe
	(-37 to 0) °C	0.029 °C	
	(0 to 250) °C	0.03 °C	

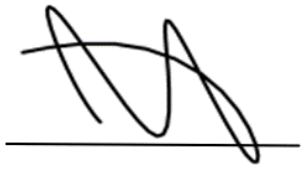
Time and Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Frequency – Source	10 MHz	8.2 nHz	Transmille GPS Frequency Standard
Frequency – Source/Measure [1]	1 Hz to 1 GHz	0.000 024 % of reading	Transmille GPS Frequency Standard
Non-contact Tachometers [1,3] (Photo)	(60 to 30 000) rpm	0.005 % of reading	Transmille Multiproduct Calibrator w/ Optical Tachometer Adaptor
Timers and Stopwatches [1]	1 ms to 86 000 s	0.58 µs/s + 4 ms	Agilent Universal Counter, Transmille GPS Frequency Standard

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. The Laboratory is only capable of determining the mass of a weight for OIML Class M1 and below.
3. rpm = revolutions per minute.
4. This scope is formatted as part of a single document including Certificate of Accreditation No. AC-2931.



Jason Stine, Vice President