



# CERTIFICATE OF ACCREDITATION

**The ANSI National Accreditation Board**

Hereby attests that

**Thermo-Temp, Inc.**  
**813-A Woodcrest**  
**Houston, TX 77018**

Fulfills the requirements of

**ISO/IEC 17025:2017**

and national standards

**ANSI/NCSL Z540-1-1994 (R2002) and**  
**ANSI/NCSL Z540.3-2006 (R2013)**

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).

Jason Stine, Vice President

Expiry Date: 12 December 2025  
Certificate Number: AC-2535



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)**

**ANSI/NCSL Z540.3-2006 (R2013)**

**Thermo-Temp, Inc.**

813-A Woodcrest

Houston, Texas 77018

Chuck Osterhaus 713-695-1939

**CALIBRATION**

Valid to: **December 12, 2025**

Certificate Number: **AC-2535**

**Electrical – DC/Low Frequency**

Parameter / Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method and/or Equipment
DC Voltage – Source <sup>1</sup>	(0 to 330) mV (0 to 3.3) V (0 to 33) V (30 to 330) V (100 to 1 000) V	16 $\mu$ V/V + 1 $\mu$ V 9 $\mu$ V/V + 2 $\mu$ V 9 $\mu$ V/V + 20 $\mu$ V 14 $\mu$ V/V + 0.15 mV 14 $\mu$ V/V + 1.5 mV	Fluke 5522A Multiproduct Calibrator
DC Voltage – Measure <sup>1</sup>	(0 to 100) mV (0.1 to 1) V (1 to 10) V (10 to 100) V (10 to 1 000) V	8 $\mu$ V/V + 0.3 $\mu$ V 7 $\mu$ V/V + 0.3 $\mu$ V 7 $\mu$ V/V + 0.5 $\mu$ V 9 $\mu$ V/V + 30 $\mu$ V 10 $\mu$ V/V + 0.1 mV	HP 3458A 8.5 Digit Multimeter
AC Voltage – Source <sup>1</sup>	(1 to 33) mV (10 to 45) Hz 45 Hz to 10 kHz (10 to 20) kHz (20 to 50) kHz (50 to 100) kHz (100 to 500) kHz (33 to 330) mV (10 to 45) Hz 45 Hz to 10 kHz (10 to 20) kHz (20 to 50) kHz (50 to 100) kHz (100 to 500) kHz	0.64 mV/V + 6 $\mu$ V 0.19 mV/V + 6 $\mu$ V 0.21 mV/V + 6 $\mu$ V 0.79 mV/V + 6 $\mu$ V 2.7 mV/V + 12 $\mu$ V 6.2 mV/V + 50 $\mu$ V 0.29 mV/V + 8 $\mu$ V 0.21 mV/V + 8 $\mu$ V 0.21 mV/V + 8 $\mu$ V 0.32 mV/V + 8 $\mu$ V 0.64 mV/V + 32 $\mu$ V 1.6 mV/V + 70 $\mu$ V	Fluke 5522A Multiproduct Calibrator



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Electrical – DC/Low Frequency

Parameter / Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method and/or Equipment
AC Voltage – Source <sup>1</sup>	(0.33 to 3.3) V		Fluke 5522A Multiproduct Calibrator
	(10 to 45) Hz	0.23 mV/V + 50 μV	
	45 Hz to 10 kHz	0.12 mV/V + 60 μV	
	(10 to 20) kHz	0.15 mV/V + 60 μV	
	(20 to 50) kHz	0.24 mV/V + 50 μV	
	(50 to 100) kHz	0.54 mV/V + 0.13 mV	
	(100 to 500) kHz	1.8 mV/V + 0.6 mV	
	(3.3 to 33) V		
	(10 to 45) Hz	0.23 mV/V + 0.65 mV	
	45 Hz to 10 kHz	0.12 mV/V + 0.6 mV	
	(10 to 20) kHz	0.19 mV/V + 0.6 mV	
	(20 to 50) kHz	0.27 mV/V + 0.6 mV	
	(50 to 100) kHz	0.7 mV/V + 1.6 mV	
	(33 to 330) V		
	10 Hz to 45 Hz	0.15 mV/V + 2 mV	
	45 Hz to 10 kHz	0.16 mV/V + 6 mV	
	10 kHz to 20 kHz	0.19 mV/V + 6 mV	
	20 kHz to 50 kHz	0.23 mV/V + 6 mV	
50 kHz to 100 kHz	1.6 mV/V + 50 mV		
(330 to 1 000) V			
45 Hz to 1 kHz	0.23 mV/V + 10 mV		
1 kHz to 5 kHz	0.2 mV/V + 10 mV		
5 kHz to 10 kHz	0.23 mV/V + 10 mV		
AC Voltage – Measure <sup>1</sup>	Up to 10 mV		HP 3458A 8.5 Digit Multimeter
	(1 to 40) Hz	0.03 % of reading + 3 μV	
	40 Hz to 1 kHz	0.03 % of reading + 1.1 μV	
	(1 to 20) kHz	0.04 % of reading + 1.1 μV	
	(20 to 50) kHz	0.09 % of reading + 1.1 μV	
	(50 to 100) kHz	0.09 % of reading + 1.1 μV	
	(100 to 300) kHz	4.1 % of reading + 2 μV	
	(10 to 100) mV		
	(1 to 40) Hz	0.017 % of reading + 4 μV	
	40 Hz to 1 kHz	0.017 % of reading + 2 μV	
	(1 to 20) kHz	0.022 % of reading + 2 μV	
	(20 to 50) kHz	0.05 % of reading + 2 μV	
	(50 to 100) kHz	0.09 % of reading + 2 μV	
	(100 to 300) kHz	0.31 % of reading + 10 μV	
	300 kHz to 1 MHz	1 % of reading + 10 μV	
	(1 to 2) MHz	1.5 % of reading + 10 μV	



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Electrical – DC/Low Frequency

Parameter / Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method and/or Equipment
AC Voltage – Measure <sup>1</sup>	(0.1 to 1) V		HP 3458A 8.5 Digit Multimeter
	(1 to 40) Hz	0.019 % of reading + 0.4 mV	
	40 Hz to 1 kHz	0.019 % of reading + 0.2 mV	
	(1 to 20) kHz	0.023 % of reading + 0.2 mV	
	(20 to 50) kHz	0.04 % of reading + 0.2 mV	
	(50 to 100) kHz	0.08 % of reading + 0.2 mV	
	(100 to 300) kHz	0.3 % of reading + 1 mV	
	300 kHz to 1 MHz	1 % of reading + 1 mV	
	(1 to 2) MHz	1.5 % of reading + 1 mV	
	(1 to 10) V		
	(1 to 40) Hz	0.008 % of reading + 0.4 mV	
	40 Hz to 1 kHz	0.008 % of reading + 0.2 mV	
	(1 to 20) kHz	0.016 % of reading + 0.2 mV	
	(20 to 50) kHz	0.03 % of reading + 0.2 mV	
	(50 to 100) kHz	0.08 % of reading + 0.2 mV	
	(100 to 300) kHz	0.3 % of reading + 1 mV	
	300 kHz to 1 MHz	1 % of reading + 1 mV	
	(1 to 2) MHz	1.5 % of reading + 1 mV	
	(10 to 100) V		
	1 Hz to 40 Hz	0.02 % of reading + 4 mV	
	40 Hz to 1 kHz	0.02 % of reading + 2 mV	
	(1 to 20) kHz	0.02 % of reading + 2 mV	
	(20 to 50) kHz	0.036 % of reading + 2 mV	
	(50 to 100) kHz	0.12 % of reading + 10 mV	
(100 to 300) kHz	0.4 % of reading + 10 mV		
300 kHz to 1 MHz	1.5 % of reading + 10 mV		
(100 to 1 000) V			
1 Hz to 40 Hz	0.04 % of reading + 40 mV		
40 Hz to 1 kHz	0.04 % of reading + 20 mV		
(1 to 20) kHz	0.06 % of reading + 20 mV		
(20 to 50) kHz	0.12 % of reading + 20 mV		
(50 to 100) kHz	0.3 % of reading + 20 mV		



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Electrical – DC/Low Frequency

Parameter / Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method and/or Equipment
Resistance – Source <sup>1</sup>	Up to 11 Ω (11 to 33) Ω (33 to 110) Ω (110 to 330) Ω (0.33 to 1.1) Ω (1.1 to 3.3) kΩ (3.3 to 11) kΩ (11 to 33) kΩ (33 to 110) kΩ (110 to 330) kΩ (0.33 to 1.1) MΩ (1.1 to 3.3) MΩ (3.3 to 11) MΩ (11 to 33) MΩ (33 to 110) MΩ (110 to 330) MΩ (0.33 to 1.1) GΩ	0.2 mΩ/Ω + 10 mΩ 27 μΩ/Ω + 15 mΩ 25 μΩ/Ω + 15 mΩ 22 μΩ/Ω + 20 mΩ 22 μΩ/Ω + 20 mΩ 22 μΩ/Ω + 0.2 Ω 22 μΩ/Ω + 0.1 Ω 22 μΩ/Ω + 1 Ω 22 μΩ/Ω + 1 Ω 25 μΩ/Ω + 10 Ω 25 μΩ/Ω + 10 Ω 47 μΩ/Ω + 0.15 kΩ 0.1 mΩ/Ω + 0.25 kΩ 0.19 mΩ/Ω + 2.5 kΩ 0.39 mΩ/Ω + 3 kΩ 2.3 mΩ/Ω + 0.1 MΩ 12 mΩ/Ω + 0.5 MΩ	Fluke 5522A Multiproduct Calibrator
Resistance – Measure <sup>1,2</sup>	Up 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 (10 to 100) MΩ (0.1 to 1) GΩ	24 μΩ/Ω + 50 μΩ 22 μΩ/Ω + 0.5 mΩ 20 μΩ/Ω + 0.5 mΩ 15 μΩ/Ω + 5 mΩ 15 μΩ/Ω + 50 mΩ 20 μΩ/Ω + 2 Ω 57 μΩ/Ω + 0.1 kΩ 0.53 mΩ/Ω + 1 kΩ 5 mΩ/Ω + 10 kΩ	HP 3458A 8.5 Digit Multimeter
DC Current – Source <sup>1</sup>	(0 to 330) μA (0 to 3.3) mA (0 to 33) mA (0 to 330) mA (0 to 1.1) A (1.1 to 3) A (0 to 11) A (11 to 20.5) A	0.12 mA/A + 20 nA 78 μA/A + 50 nA 78 μA/A + 0.25 μA 78 μA/A + 2.5 μA 0.37 mA/A + 40 μA 0.3 mA/A + 40 μA 0.39 mA/A + 0.5 mA 0.78 mA/A + 0.75 mA	Fluke 5522A Multiproduct Calibrator (Locked Ranges)
DC Current – Measure	(0 to 100) nA (0.1 to 1) μA (1 to 10) μA (10 to 100) μA	36 μA/A + 40 pA 26 μA/A + 40 pA 26 μA/A + 0.1 nA 30 μA/A + 0.8 nA	HP 3458A 8.5 Digit Multimeter
DC Current – Measure	(0.1 to 1) mA (1 to 10) mA (10 to 100) mA (0.1 to 1) A	28 μA/A + 5 nA 28 μA/A + 50 nA 46 μA/A + 0.5 μA 0.12 mA/A + 10 μA	HP 3458A 8.5 Digit Multimeter



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Electrical – DC/Low Frequency

Parameter / Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method and/or Equipment
AC Current – Source <sup>1</sup>	(29 to 330) $\mu$ A		Fluke 5522A Multiproduct Calibrator
	(10 to 20) Hz	0.17 % of reading + 0.1 $\mu$ A	
	(20 to 45) Hz	0.14 % of reading + 0.1 $\mu$ A	
	45 Hz to 1 kHz	0.12 % of reading + 0.1 $\mu$ A	
	(1 to 5) kHz	0.23 % of reading + 0.2 $\mu$ A	
	(5 to 10) kHz	0.62 % of reading + 0.2 $\mu$ A	
	(10 to 30) kHz	1.2 % of reading + 0.4 $\mu$ A	
	(0.33 to 3.3) mA		
	(10 to 20) Hz	0.17 % of reading + 0.15 $\mu$ A	
	(20 to 45) Hz	0.12 % of reading + 0.2 $\mu$ A	
	45 Hz to 1 kHz	0.1 % of reading + 0.2 $\mu$ A	
	(1 to 5) kHz	0.53 % of reading + 0.2 $\mu$ A	
	(5 to 10) kHz	0.39 % of reading + 0.3 $\mu$ A	
	(10 to 30) kHz	0.78 % of reading + 0.6 $\mu$ A	
	(3.3 to 33) mA		
	(10 to 20) Hz	0.16 % of reading + 2 $\mu$ A	
	(20 to 45) Hz	0.1 % of reading + 2 $\mu$ A	
	45 Hz to 1 kHz	0.078 % of reading + 2 $\mu$ A	
	(1 to 5) kHz	0.062 % of reading + 2 $\mu$ A	
	(5 to 10) kHz	0.16 % of reading + 3 $\mu$ A	
	(10 to 30) kHz	0.31 % of reading + 4 $\mu$ A	
	(33 to 330) mA		
	(10 to 20) Hz	0.16 % of reading + 20 $\mu$ A	
	(20 to 45) Hz	0.1 % of reading + 20 $\mu$ A	
	45 Hz to 1 kHz	0.031 % of reading + 20 $\mu$ A	
	(1 to 5) kHz	0.078 % of reading + 50 $\mu$ A	
	(5 to 10) kHz	0.16 % of reading + 0.1 mA	
	(10 to 30) kHz	0.31 % of reading + 0.2 mA	
	(0.33 to 1.1) A		
	(10 to 45) Hz	0.14 % of reading + 0.1 mA	
45 Hz to 1 kHz	0.05 % of reading + 0.1 mA		
(1 to 5) kHz	0.47 % of reading + 1 mA		
(5 to 10) kHz	1.9 % of reading + 5 mA		
(1.1 to 3) A			
(10 to 45) Hz	0.14 % of reading + 0.1 mA		
45 Hz to 1 kHz	0.05 % of reading + 0.1 mA		
(1 to 5) kHz	0.47 % of reading + 1 mA		
(5 to 10) kHz	1.9 % of reading + 5 mA		

**Electrical – DC/Low Frequency**

Parameter / Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method and/or Equipment
AC Current – Source <sup>1</sup>	(3 to 11) A (45 to 500) Hz 500 Hz to 1 kHz (1 to 5) kHz	0.05 % of reading + 2 mA 0.08 % of reading + 2 mA 2.3 % of reading + 2 mA	Fluke 5522A Multiproduct Calibrator
	(11 to 20.5) A (45 to 100) Hz 100 Hz to 1 kHz (1 to 5) kHz	0.09 % of reading + 5 mA 0.12 % of reading + 5 mA 2.3 % of reading + 5 mA	
AC Current – Measure	(5 to 100) $\mu$ A (10 to 20) Hz (20 to 45) Hz (45 to 100) Hz 100 to 5 kHz	4.1 mA/A + 30 nA 1.7 mA/A + 30 nA 0.95 mA/A + 30 nA 0.95 mA/A + 30 nA	HP 3458A 8.5 Digit Multimeter
	(0.1 to 1) mA (10 to 20) Hz (20 to 45) Hz (45 to 100) Hz 100 to 5 kHz (5 to 20) kHz (20 to 50) kHz (50 to 100) kHz	4.1 mA/A + 0.2 $\mu$ A 1.7 mA/A + 0.2 $\mu$ A 0.94 mA/A + 0.2 $\mu$ A 0.78 mA/A + 0.2 $\mu$ A 0.94 mA/A + 0.2 $\mu$ A 4.1 mA/A + 0.4 $\mu$ A 5.6 mA/A + 1.5 $\mu$ A	
	(1 to 10) mA (10 to 20) Hz (20 to 45) Hz (45 to 100) Hz 100 to 5 kHz (5 to 20) kHz (20 to 50) kHz (50 to 100) kHz	4.1 mA/A + 20 $\mu$ A 1.7 mA/A + 20 $\mu$ A 0.93 mA/A + 20 $\mu$ A 0.32 mA/A + 20 $\mu$ A 0.61 mA/A + 20 $\mu$ A 4 mA/A + 40 $\mu$ A 5.5 mA/A + 0.15 mA	
	(10 to 100) mA (10 to 20) Hz (20 to 45) Hz (45 to 100) Hz 100 to 5 kHz (5 to 20) kHz (20 to 50) kHz (50 to 100) kHz	4.1 mA/A + 20 $\mu$ A 1.7 mA/A + 20 $\mu$ A 0.95 mA/A + 20 $\mu$ A 0.33 mA/A + 20 $\mu$ A 0.62 mA/A + 20 $\mu$ A 4 mA/A + 40 $\mu$ A 5.5 mA/A + 0.15 mA	

**Electrical – DC/Low Frequency**

Parameter / Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method and/or Equipment
AC Current – Measure	(0.1 to 1) A (10 to 20) Hz (20 to 45) Hz (45 to 100) Hz 100 to 5 kHz (5 to 20) kHz (20 to 50) kHz	4.1 mA/A + 0.2 mA 1.8 mA/A + 0.2 mA 0.83 mA/A + 0.2 mA 1 mA/A + 0.2 mA 3 mA/A + 0.2 mA 10 mA/A + 0.4 mA	HP 3458A 8.5 Digit Multimeter
Capacitance – Source <sup>1</sup> (Simulated)	(0.19 to 0.4) nF (0.4 to 1.1) nF (1.1 to 3.3) nF (3.3 to 11) nF (11 to 33) nF (33 to 110) nF (110 to 330) nF (0.33 to 1,1) μF (1.1 to 3.3) μF (3.3 to 11) μF (11 to 33) μF (33 to 110) μF (110 to 330) μF (0.33 to 1.1) mF (1.1 to 3.3) mF (3.3 to 11) mF (11 to 33) mF (33 to 110) mF	3.9 % of reading + 10 pF 1.4 % of reading + 10 pF 1.1 % of reading + 10 pF 0.28 % of reading + 10 pF 0.43% of reading + 10 pF 0.26.% of reading + 10 pF 0.19 % of reading + 30 pF 0.19 % of reading + 1 nF 0.19 % of reading + 3 nF 0.19 % of reading + 10 nF 0.31 % of reading + 30 nF 0.35 % of reading + 0.1 μF 0.35 % of reading + 0.3 μF 0.35 % of reading + 1 μF 0.35 % of reading + 3 μF 0.35 % of reading + 10 μF 0.58 % of reading + 30 μF 0.85 % of reading + 0.1 mF	Fluke 5522A Multiproduct Calibrator
Electrical Simulation of Thermocouple Indicating Devices – Source/Measure <sup>1</sup>	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 1 000) °C (1 000 to 1 372) °C	0.24 °C 0.12 °C 0.13 °C 0.13 °C 0.19 °C 0.35 °C 0.14 °C 0.18 °C 0.2 °C 0.33 °C	Fluke 5522A Multiproduct Calibrator





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Electrical – DC/Low Frequency

Parameter / Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method and/or Equipment
Electrical Simulation of Thermocouple Indicating Devices – Source/Measure <sup>1</sup>	Type N		Fluke 5522A Multiproduct Calibrator
	(-200 to -100) °C	0.33 °C	
	(-100 to -25) °C	0.17 °C	
	(-25 to 120) °C	0.17 °C	
	(120 to 410) °C	0.14 °C	
	(410 to 1 300) °C	0.21 °C	
	Type R		
	(0 to 250) °C	0.44 °C	
	(250 to 400) °C	0.27 °C	
	(400 to 1 000) °C	0.26 °C	
	(1 000 to 1 767) °C	0.31 °C	
	Type S		
	(0 to 250) °C	0.37 °C	
	(250 to 1 000) °C	0.28 °C	
	(1 000 to 1 400) °C	0.29 °C	
(1 400 to 1 767) °C	0.36 °C		
Type T			
(-250 to -150) °C	0.49 °C		
(-150 to 0) °C	0.19 °C		
(0 to 120) °C	0.12 °C		
(120 to 400) °C	0.11 °C		
Resistance Simulation of RTD Indicating Devices – Source <sup>1</sup>	Pt 385, 100 Ω		Fluke 5522A Multiproduct Calibrator
	(-200 to -80) °C	0.04 °C	
	(-80 to 0) °C	0.05 °C	
	(0 to 100) °C	0.05 °C	
	(100 to 300) °C	0.07 °C	
	(300 to 400) °C	0.08 °C	
	(400 to 630) °C	0.09 °C	
	(630 to 800) °C	0.18 °C	
	Pt 3926, 100 Ω		
	(-200 to -80) °C	0.04 °C	
	(-80 to 0) °C	0.05 °C	
	(0 to 100) °C	0.07 °C	
	(100 to 300) °C	0.08 °C	
	(300 to 400) °C	0.16 °C	

**Electrical – DC/Low Frequency**

Parameter / Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method and/or Equipment
Resistance Simulation of RTD Indicating Devices – Source <sup>1</sup>	Pt 3916, 100 Ω		Fluke 5522A Multiproduct Calibrator
	(-200 to -190) °C	0.19 °C	
	(-190 to -80) °C	0.03 °C	
	(-80 to 0) °C	0.04 °C	
	(0 to 100) °C	0.05 °C	
	(100 to 260) °C	0.05 °C	
	(260 to 300) °C	0.06 °C	
	(300 to 400) °C	0.07 °C	
(400 to 600) °C	0.08 °C		
(600 to 630) °C	0.18 °C		

**Mass and Mass Related**

Parameter / Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method and/or Equipment
Rockwell Hardness Testers <sup>1</sup>	HRA		Indirect Verification per ASTM E 18 using Test Blocks
	Low	0.89 HRA	
	Middle	0.89 HRA	
	High	0.53 HRA	
	HRBW		
	Low	1.43 HRBW	
	Middle	1.37 HRBW	
	High	1.17 HRBW	
	HRC		
Low	0.81 HRC		
Middle	0.79 HRC		
High	0.71 HRC		
Brinell Hardness Testers <sup>1,4</sup>	HBW		Indirect Verification per ASTM E 10 using Test Blocks
	106 HBW	7.2 HBW	
	223 HBW	7.2 HBW	
	451 HBW	18 HBW	
Pressure Gauges, Differential Pressure Gauges <sup>1,3</sup>	(-14 to 15) psig	0.002 9 psi	Druck DPI150 Pressure/Vacuum Calibrator
	Up to 150 psig	0.021 psi	
	Up to 1 000 psig (200 to 20 000) psig	0.14 psi 4.6 psi	Budenberg CPB5800 Deadweight Tester
	(10 000 to 72 500) psig	4.8 psi	Fluke PG7302 Hydraulic Piston Gauge

**Thermodynamic**

Parameter / Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method and/or Equipment
Temperature – Measure <sup>1</sup>	(-197 to -80) °C	0.016 °C	Fluke 1502A Thermometer Readout, Fluke 562xA Secondary PRT
	(-80 to -38.84) °C	0.023 °C	
	(-38.84 to 0) °C	0.028 °C	
	(0 to 231.9) °C	0.082 °C	
	(231.9 to 419.5) °C	0.11 °C	
	(419.5 to 660) °C	0.16 °C	
Temperature – Measuring Equipment <sup>1</sup>	(-197 to -80) °C	0.02 °C	Fluke 1502A Thermometer Readout, Fluke 562xA Secondary PRT, Liquid Bath, Dry Well
	(-80 to -38.84) °C	0.026 °C	
	(-38.84 to 0) °C	0.034 °C	
	(0 to 231.9) °C	0.1 °C	
	(231.9 to 419.5) °C	0.16 °C	
	(419.5 to 660) °C	0.2 °C	


**Time and Frequency**

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Frequency – Source <sup>1</sup>	10 mHz to 2 MHz	0.000 2 % of reading + 5 μHz	Fluke 5522A Multiproduct 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.
2. For 2-wire measurement, add 0.25 Ω.
3. 0.6R will be added to the Measurement Uncertainty at the time of calibration (where R = resolution of the device under calibration).
4. The range value is a nominal value. The actual value of the standard will be used during calibration and the associated uncertainty will be utilized to calculate measurement uncertainty.
5. This scope is formatted as part of a single document including Certificate of Accreditation No. AC-2535.



Jason Stine, Vice President