



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005
& ANSI/NCSL Z540-1-1994

Davis Calibration

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CALIBRATION

Valid to: June 15, 2011

Certificate Number: AC-1273

I. Electromagnetic - DC/Low Frequency

PARAMETER / EQUIPMENT	RANGE	CALIBRATION & MEASUREMENT CAPABILITY [EXPRESSED AS UNCERTAINTY(±)]	REFERENCE STANDARD OR EQUIPMENT	METHOD(S)
DC Voltage - Source	Up to 220 mV 220 mV to 2.2 V (2.2 to 11) V (11 to 22) V (22 to 220) V 220 V to 1.1 V	8 µV/V + 600 nV 7 µV/V + 1 µV 7 µV/V + 3.5 µV 7 µV/V + 6.5 µV 8 µV/V + 80 µV 9 µV/V + 500 µV	Fluke 5700A Opt 03 Fluke 5725A	OEM, GIDEP, and Laboratory Developed Procedures
DC Voltage - Measure	(10 to 100) mV 100 mV to 1 V (1 to 10) V (10 to 100) V 100 V to 1 kV	5.5 µV/V + 300 nV 5.1 µV/V + 300 nV 4.6 µV/V + 500 nV 6.5 µV/V + 30 µV 16.5 µV/V + 100 µV	HP 3458A Opt 002	
DC Current – Source	Up to 220 µA 220 µA to 2.2 mA (2.2 to 22) mA (22 to 220) mA 220 mA to 2.2 A (2.2 to 3) A (3 to 11) A (11 to 20.5) A	50 µA/A + 8 nA 50 µA/A + 8 nA 50 µA/A + 80 nA 60 µA/A + 800 nA 80 µA/A + 25 µA 380 µA/A + 40 µA 360 µA/A + 480 µA 1 mA/A + 750 µA	Fluke 5700A Opt 03 Fluke 5520A Fluke 5725A Fluke 5520A	



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DC Current - Measure	(10 to 100) μ A 100 μ A to 1 mA (1 to 10) mA (10 to 100) mA 100 mA to 1 A	20 μ A/A + 800 pA 20 μ A/A + 5 nA 20 μ A/A + 50 nA 35 μ A/A + 500 nA 110 μ A/A + 10 μ A	HP 3458A Opt 002	OEM, GIDEP, and Laboratory Developed Procedures
Resistance - Source	1 Ω 1.9 Ω 10 Ω 19 Ω 100 Ω 190 Ω 1 k Ω 1.9 k Ω 10 k Ω 19 k Ω 100 k Ω 190 k Ω 1 M Ω 1.9 M Ω 10 M Ω 19 M Ω 100 M Ω	95 $\mu\Omega$ 181 $\mu\Omega$ 280 $\mu\Omega$ 513 $\mu\Omega$ 1.7 m Ω 3.23 m Ω 13 m Ω 24.7 m Ω 120 m Ω 228 m Ω 1.4 Ω 2.66 Ω 20 Ω 40 Ω 400 Ω 893 Ω 11 k Ω	Fluke 5700A Opt 03	
Resistance – Measure	Up to 10 Ω (10 to 100) Ω 100 Ω to 1 k Ω (1 to 10) k Ω (10 to 100) k Ω 100 k Ω to 1 M Ω (1 to 10) M Ω (10 to 100) M Ω 100 M Ω to 1 G Ω	18 $\mu\Omega/ \Omega$ + 50 $\mu\Omega$ 13 $\mu\Omega/ \Omega$ + 500 $\mu\Omega$ 11 $\mu\Omega/ \Omega$ + 500 $\mu\Omega$ 11 $\mu\Omega/ \Omega$ + 5 m Ω 11 $\mu\Omega/ \Omega$ + 50 m Ω 15 $\mu\Omega/ \Omega$ + 2 Ω 53 $\mu\Omega/ \Omega$ + 100 Ω 503 $\mu\Omega/ \Omega$ + 1 k Ω 5 m Ω/ Ω + 10 k Ω	HP 3458A Opt 002	

PARAMETER / EQUIPMENT	RANGE	CALIBRATION & MEASUREMENT CAPABILITY [EXPRESSED AS UNCERTAINTY(+)]	REFERENCE STANDARD OR EQUIPMENT	METHOD(S)
AC Voltage - Source	<p>Up to 2.2 mV</p> <p>(10 to 20) Hz (20 to 40) Hz 40 Hz to 20 kHz (20 to 50) kHz (50 to 100) kHz (100 to 300) kHz (300 to 500) kHz 500 kHz to 1 MHz</p> <p>(2.2 to 22) mV</p> <p>(10 to 20) Hz (20 to 40) Hz 40 Hz to 20 kHz (20 to 50) kHz (50 to 100) kHz (100 to 300) kHz (300 to 500) kHz 500 kHz to 1 MHz</p> <p>(22 to 220) mV</p> <p>(10 to 20) Hz (20 to 40) Hz 40 Hz to 20 kHz (20 to 50) kHz (50 to 100) kHz (100 to 300) kHz (300 to 500) kHz 500 kHz to 1 MHz</p> <p>220 mV to 2.2 V</p> <p>(10 to 20) Hz (20 to 40) Hz 40 Hz to 20 kHz (20 to 50) kHz (50 to 100) kHz (100 to 300) kHz (300 to 500) kHz 500 kHz to 1 MHz</p>	<p>550 $\mu\text{V/V} + 4.5 \mu\text{V}$ 210 $\mu\text{V/V} + 4.5 \mu\text{V}$ 105 $\mu\text{V/V} + 4.5 \mu\text{V}$ 370 $\mu\text{V/V} + 4.5 \mu\text{V}$ 850 $\mu\text{V/V} + 7 \mu\text{V}$ 1.1 $\text{mV/V} + 13 \mu\text{V}$ 1.7 $\text{mV/V} + 25 \mu\text{V}$ 3.4 $\text{mV/V} + 25 \mu\text{V}$</p> <p>550 $\mu\text{V/V} + 5 \mu\text{V}$ 210 $\mu\text{V/V} + 5 \mu\text{V}$ 105 $\mu\text{V/V} + 5 \mu\text{V}$ 370 $\mu\text{V/V} + 5 \mu\text{V}$ 850 $\mu\text{V/V} + 7 \mu\text{V}$ 1.1 $\text{mV/V} + 12 \mu\text{V}$ 1.7 $\text{mV/V} + 25 \mu\text{V}$ 3.4 $\text{mV/V} + 25 \mu\text{V}$</p> <p>550 $\mu\text{V/V} + 13 \mu\text{V}$ 210 $\mu\text{V/V} + 8 \mu\text{V}$ 105 $\mu\text{V/V} + 8 \mu\text{V}$ 320 $\mu\text{V/V} + 8 \mu\text{V}$ 850 $\mu\text{V/V} + 25 \mu\text{V}$ 1.1 $\text{mV/V} + 25 \mu\text{V}$ 1.7 $\text{mV/V} + 35 \mu\text{V}$ 3.4 $\text{mV/V} + 80 \mu\text{V}$</p> <p>500 $\mu\text{V/V} + 80 \mu\text{V}$ 160 $\mu\text{V/V} + 25 \mu\text{V}$ 75 $\mu\text{V/V} + 6 \mu\text{V}$ 120 $\mu\text{V/V} + 16 \mu\text{V}$ 250 $\mu\text{V/V} + 70 \mu\text{V}$ 430 $\mu\text{V/V} + 130 \mu\text{V}$ 1.1 $\text{mV/V} + 350 \mu\text{V}$ 2.2 $\text{mV/V} + 850 \mu\text{V}$</p>	Fluke 5700A Opt 03	OEM, GIDEP, and Laboratory Developed Procedures

PARAMETER / EQUIPMENT	RANGE	CALIBRATION & MEASUREMENT CAPABILITY [EXPRESSED AS UNCERTAINTY(+)]	REFERENCE STANDARD OR EQUIPMENT	METHOD(S)
AC Voltage - Source (cont.)	(2.2 to 22) V (10 to 20) Hz (20 to 40) Hz 40 Hz to 20 kHz (20 to 50) kHz (50 to 100) kHz (100 to 300) kHz (300 to 500) kHz 500 kHz to 1 MHz (22 to 220) V (10 to 20) Hz (20 to 40) Hz 40 Hz to 20 kHz (20 to 50) kHz (50 to 100) kHz (100 to 300) kHz (300 to 500) kHz 500 kHz to 1 MHz 220 V to 1.1 kV (15 to 50) Hz 50 Hz to 1 kHz	500 $\mu\text{V}/\text{V}$ + 800 μV 160 $\mu\text{V}/\text{V}$ + 250 μV 75 $\mu\text{V}/\text{V}$ + 60 μV 120 $\mu\text{V}/\text{V}$ + 160 μV 250 $\mu\text{V}/\text{V}$ + 350 μV 500 $\mu\text{V}/\text{V}$ + 1.5 mV 1.3 mV/V + 4.3 mV 2.7 mV/V + 8.5 mV 500 $\mu\text{V}/\text{V}$ + 8 mV 160 $\mu\text{V}/\text{V}$ + 2.5 mV 80 $\mu\text{V}/\text{V}$ + 800 μV 220 $\mu\text{V}/\text{V}$ + 3.5 mV 500 $\mu\text{V}/\text{V}$ + 8 mV 1.5 mV/V + 90 mV 4.7 mV/V + 90 mV 115 mV/V + 190 mV 400 $\mu\text{V}/\text{V}$ + 16 mV 80 $\mu\text{V}/\text{V}$ + 3.5 mV	Fluke 5700A Opt 03	OEM, GIDEP, and Laboratory Developed Procedures
AC Voltage - Measure	(1 to 10) mV (1 to 40) Hz 40 Hz to 1 kHz (1 to 20) kHz (20 to 50) kHz (50 to 100) kHz (100 to 300) kHz 300 kHz to 1MHz (1 to 4) MHz (4 to 8) MHz	300 $\mu\text{V}/\text{V}$ + 3 μV 200 $\mu\text{V}/\text{V}$ + 1.1 μV 300 $\mu\text{V}/\text{V}$ + 1.1 μV 1 mV/V + 1.1 μV 5 mV/V + 1.1 μV 40 mV/V + 2 μV 12 mV/V + 5 μV 70 mV/V + 7 μV 200 mV/V + 8 μV	HP 3458A Opt 002	

PARAMETER / EQUIPMENT	RANGE	CALIBRATION & MEASUREMENT CAPABILITY [EXPRESSED AS UNCERTAINTY(±)]	REFERENCE STANDARD OR EQUIPMENT	METHOD(S)
AC Voltage - Measure (cont.)	(10 to 100) mV (1 to 40) Hz 40 Hz to 1 kHz (1 to 20) kHz (20 to 50) kHz (50 to 100) kHz (100 to 300) kHz 300 kHz to 1 MHz (1 to 4) MHz (4 to 8) MHz (8 to 10) MHz 100 mV to 1 V (1 to 40) Hz 40 Hz to 1 kHz (1 to 20) kHz (20 to 50) kHz (50 to 100) kHz (100 to 300) kHz 300 kHz to 1 MHz (1 to 4) MHz (4 to 8) MHz (8 to 10) MHz (1 to 10) V (1 to 40) Hz 40 Hz to 1 kHz (1 to 20) kHz (20 to 50) kHz (50 to 100) kHz (100 to 300) kHz 300 kHz to 1 MHz (1 to 4) MHz (4 to 8) MHz (8 to 10) MHz	72 µV/V + 4 µV 72 µV/V + 2 µV 142 µV/V + 2 µV 302 µV/V + 2 µV 802 µV/V + 2 µV 3 mV/V + 10 µV 10 mV/V + 10 µV 15 mV/V + 10 µV 40 mV/V + 8 µV 150 mV/V + 100 µV 72 µV/V + 40 µV 72 µV/V + 20 µV 142 µV/V + 20 µV 302 µV/V + 20 µV 802 µV/V + 20 µV 3 mV/V + 100 µV 1 mV/V + 100 µV 15 mV/V + 100 µV 40 mV/V + 800 µV 150 mV/V + 1 mV 72 µV/V + 400 µV 72 µV/V + 200 µV 142 µV/V + 200 µV 302 µV/V + 200 µV 802 µV/V + 200 µV 3 mV/V + 1 mV 10 mV/V + 1 mV 15 mV/V + 1 mV 40 mV/V + 8 mV 150 mV/V + 10 mV	HP 3458A Opt 002	OEM, GIDEP, and Laboratory Developed Procedures



PARAMETER / EQUIPMENT	RANGE	CALIBRATION & MEASUREMENT CAPABILITY [EXPRESSED AS UNCERTAINTY(+)]	REFERENCE STANDARD OR EQUIPMENT	METHOD(S)
AC Voltage - Measure (cont.)	(10 to 100) V (1 to 40) Hz 40Hz to 1 kHz (1 to 20) kHz (20 to 50) kHz (50 to 100) kHz (100 to 300) kHz 300 kHz to 1 MHz 100 V to 1 kV (1 to 40) Hz 40 Hz to 1 kHz (1 to 20) kHz (20 to 50) kHz (50 to 100) kHz	200 $\mu\text{V/V} + 4 \text{ mV}$ 200 $\mu\text{V/V} + 2 \text{ mV}$ 200 $\mu\text{V/V} + 2 \text{ mV}$ 350 $\mu\text{V/V} + 2 \text{ mV}$ 1.2 $\text{mV/V} + 2 \text{ mV}$ 4 $\text{mV/V} + 10 \text{ mV}$ 15 $\text{mV/V} + 10 \text{ mV}$ 400 $\mu\text{V/V} + 40 \text{ mV}$ 400 $\mu\text{V/V} + 20 \text{ mV}$ 600 $\mu\text{V/V} + 20 \text{ mV}$ 1.2 $\text{mV/V} + 20 \text{ mV}$ 3 $\text{mV/V} + 20 \text{ mV}$	HP 3458A Opt 002	OEM, GIDEP, and Laboratory Developed Procedures
AC Current - Source	(9 to 220) μA (10 to 20) Hz (20 to 40) Hz 40 Hz to 1 kHz (1 to 5) kHz (5 to 10) kHz 220 μA to 2.2 mA (10 to 20) Hz (20 to 40) Hz 40 Hz to 1 kHz (1 to 5) kHz (5 to 10) kHz (2.2 to 22) mA (10 to 20) Hz (20 to 40) Hz 40 Hz to 1 kHz (1 to 5) kHz (5 to 10) kHz (22 to 220) mA (10 to 20) Hz (20 to 40) Hz 40 Hz to 1 kHz (1 to 5) kHz (5 to 10) kHz	700 $\mu\text{A/A} + 25 \text{ nA}$ 350 $\mu\text{A/A} + 20 \text{ nA}$ 140 $\mu\text{A/A} + 16 \text{ nA}$ 600 $\mu\text{A/A} + 40 \text{ nA}$ 1.6 $\text{mA/A} + 80 \text{ nA}$ 700 $\mu\text{A/A} + 40 \text{ nA}$ 350 $\mu\text{A/A} + 35 \text{ nA}$ 140 $\mu\text{A/A} + 35 \text{ nA}$ 600 $\mu\text{A/A} + 400 \text{ nA}$ 1.6 $\text{mA/A} + 800 \text{ nA}$ 700 $\mu\text{A/A} + 400 \text{ nA}$ 350 $\mu\text{A/A} + 350 \text{ nA}$ 140 $\mu\text{A/A} + 350 \text{ nA}$ 600 $\mu\text{A/A} + 4 \mu\text{A}$ 1.6 $\text{mA/A} + 8 \mu\text{A}$ 700 $\mu\text{A/A} + 4 \mu\text{A}$ 350 $\mu\text{A/A} + 3.5 \mu\text{A}$ 140 $\mu\text{A/A} + 3.5 \mu\text{A}$ 600 $\mu\text{A/A} + 40 \mu\text{A}$ 1.6 $\text{mA/A} + 80 \mu\text{A}$	Fluke 5700A Opt 03	

PARAMETER / EQUIPMENT	RANGE	CALIBRATION & MEASUREMENT CAPABILITY [EXPRESSED AS UNCERTAINTY(+)]	REFERENCE STANDARD OR EQUIPMENT	METHOD(S)
AC Current - Source (cont.)	220 mA to 2.2 A 20 Hz to 1 kHz (1 to 5) kHz (5 to 10) kHz (2.2 to 11) A 40 Hz to 1kHz (1 to 5) kHz (5 to 10) kHz (11 to 20.5) A (45 to 100) Hz 100Hz to 1 kHz (1 to 5) kHz	650 μ A/A + 35 μ A 750 μ A/A + 80 μ A 8.5 mA/A + 160 μ A 460 μ A/A + 170 μ A 950 μ A/A + 380 μ A 3.6 mA/A + 750 μ A 1.2 mA/A + 5mA 1.5 mA/A + 5mA 30 mA/A + 5mA	Fluke 5700A Opt 03 Fluke 5725A Fluke 5520A	OEM, GIDEP, and Laboratory Developed Procedures
AC Current - Measure	(5 to 100) μA (10 to 20) Hz (20 to 45) Hz (45 to 100) Hz 100 Hz to 1 kHz 100 μA to 1 mA (10 to 20) Hz (20 to 45) Hz (45 to 100) Hz 100 Hz to 5 kHz (5 to 20) kHz (20 to 50) kHz (50 to 100) kHz (1 to 10) mA (10 to 20) Hz (20 to 45) Hz (45 to 100) Hz 100 Hz to 5 kHz (5 to 20) kHz (20 to 50) kHz	4 mA/A + 30 nA 1.5 mA/A + 30 nA 600 μ A/A + 30 nA 600 μ A/A + 30 nA 4 mA/A + 200 nA 1.5 mA/A + 200 nA 600 μ A/A + 200 nA 300 μ A/A + 200 nA 600 μ A/A + 200 nA 4 mA/A + 400 nA 5.5 mA/A + 1.5 μ A 4 mA/A + 2 μ A 1.5 mA/A + 2 μ A 600 μ A/A + 2 μ A 300 μ A/A + 2 μ A 600 μ A/A + 2 μ A 4 mA/A + 4 μ A	HP 3458A Opt 002	

PARAMETER / EQUIPMENT	RANGE	CALIBRATION & MEASUREMENT CAPABILITY [EXPRESSED AS UNCERTAINTY(+)]	REFERENCE STANDARD OR EQUIPMENT	METHOD(S)
AC Current - Measure (cont.)	(10 to 100) mA (10 to 20) Hz (20 to 45) Hz (45 to 100) Hz 100 Hz to 5 kHz (5 to 20) kHz (20 to 50) kHz (50 to 100) kHz 100 mA to 1 A (10 to 20) Hz (20 to 45) Hz (45 to 100) Hz 100 Hz to 5 kHz (5 to 20) kHz (20 to 50) kHz	4 mA/A + 20 μ A 1.5 mA/A + 20 μ A 600 μ A/A + 20 μ A 300 μ A/A + 20 μ A 600 μ A/A + 20 μ A 4 mA/A + 40 μ A 5.5 mA/A + 150 μ A 4 mA/A + 200 μ A 1.6 mA/A + 200 μ A 800 μ A/A + 200 μ A 1 mA/A + 200 μ A 3 mA/A + 200 μ A 10 mA/A + 400 μ A	HP 3458A Opt 002	OEM, GIDEP, and Laboratory Developed Procedures
Capacitance - Source (190 to 400) pF 400 pF 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 330 nF to 1.1 μ F (1.1 to 3.3) μ F (3.3 to 11) μ F (11 to 33) μ F (33 to 110) μ F (110 to 330) μ F 330 μ F to 1.1 mF (1.1 to 3.3) mF (3.3 to 11) mF (11 to 33) mF (33 to 110) mF	10 Hz to 10 kHz 10 Hz to 10 kHz 10 Hz to 3 kHz 10 Hz to 1 kHz 10 Hz to 1 kHz 10 Hz to 1 kHz 10 Hz to 1 kHz (10 to 600) Hz (10 to 300) Hz (10 to 150) Hz (10 to 120) Hz (10 to 80) Hz Up to 50 Hz Up to 20 Hz Up to 6 Hz Up to 2 Hz Up to 0.6 Hz Up to 0.2 Hz	5 mF/F + 10 pF 5 mF/F + 10 pF 5 mF/F + 10 pF 2.5 mF/F + 10 pF 2.5 mF/F + 100 pF 2.5 mF/F + 100 pF 2.5 mF/F + 300 pF 2.5 mF/F + 1 nF 2.5 mF/F + 3 nF 2.5 mF/F + 10 nF 4 mF/F + 30 nF 4.5 mF/F + 100 nF 4.5 mF/F + 300 nF 4.5 mF/F + 1 μ F 4.5 mF/F + 3 μ F 4.5 mF/F + 10 μ F 7.5 mF/F + 30 μ F 11 mF/F + 100 μ F	Fluke 5520A	



PARAMETER / EQUIPMENT	RANGE	CALIBRATION & MEASUREMENT CAPABILITY [EXPRESSED AS UNCERTAINTY(±)]	REFERENCE STANDARD OR EQUIPMENT	METHOD(S)
Electrical Simulation of Thermocouple Indicators			Fluke 5520A/SC 1100	OEM, GIDEP, and Laboratory Developed Procedures
Type B	(600 to 800) °C	0.51 °C		
	(800 to 1 000) °C	0.39 °C		
	(1 000 to 1 550) °C	0.35 °C		
	(1 550 to 1 820) °C	0.38 °C		
Type C	(0 to 150) °C	0.35 °C		
	(150 to 650) °C	0.3 °C		
	(650 to 1 000) °C	0.36 °C		
	(1 000 to 1 800) °C	0.58 °C		
	(1 800 to 2 316) °C	0.97 °C		
Type E	(-250 to -100) °C	0.58 °C		
	(-100 to -25) °C	0.19 °C		
	(-25 to 350) °C	0.16 °C		
	(350 to 650) °C	0.19 °C		
	(650 to 1 000) °C	0.24 °C		
Type J	(-210 to -100) °C	0.32 °C		
	(-100 to -30) °C	0.19 °C		
	(-30 to 150) °C	0.17 °C		
	(150 to 760) °C	0.2 °C		
	(760 to 1 200) °C	0.27 °C		
Type K	(-200 to -100) °C	0.38 °C		
	(-100 to -25) °C	0.21 °C		
	(-25 to 120) °C	0.19 °C		
	(120 to 1 000) °C	0.3 °C		
	(1 000 to 1 372) °C	0.46 °C		
Type L	(-200 to -100) °C	0.43 °C		
	(-100 to 800) °C	0.3 °C		
	(800 to 900) °C	0.2 °C		

PARAMETER / EQUIPMENT	RANGE	CALIBRATION & MEASUREMENT CAPABILITY [EXPRESSED AS UNCERTAINTY(+)]	REFERENCE STANDARD OR EQUIPMENT	METHOD(S)
Electrical Simulation of Thermocouple Indicators (cont.)			Fluke 5520A/ SC 1100	OEM, GIDEP, and Laboratory Developed Procedures
Type N	(-200 to -100) °C	0.46 °C		
	(-100 to -25) °C	0.25 °C		
	(-25 to 120) °C	0.22 °C		
	(120 to 410) °C	0.21 °C		
	(410 to 1 300) °C	0.31 °C		
Type R	(0 to 250) °C	0.66 °C		
	(250 to 400) °C	0.4 °C		
	(400 to 1 000) °C	0.38 °C		
	(1 000 to 1 767) °C	0.46 °C		
Type S	(0 to 250) °C	0.54 °C		
	(250 to 1 000) °C	0.42 °C		
	(1 000 to 1 400) °C	0.43 °C		
	(1 400 to 1 767) °C	0.53 °C		
TypeT	(-250 to -150) °C	0.73 °C		
	(-150 to 0) °C	0.28 °C		
	(0 to 120) °C	0.19 °C		
	(120 to 400) °C	0.17 °C		
Type U	(-200 to 0) °C	0.65 °C		
	(0 to 600) °C	0.31 °C		



PARAMETER / EQUIPMENT	RANGE	CALIBRATION & MEASUREMENT CAPABILITY [EXPRESSED AS UNCERTAINTY(+)]	REFERENCE STANDARD OR EQUIPMENT	METHOD(S)
Electrical Simulation of RTDs			Fluke 5520A/SC 1100	OEM, GIDEP, and Laboratory Developed Procedures
Pt 385 (100 Ω)	(-200 to 0) °C	0.06 °C		
	(0 to 100) °C	0.08 °C		
	(100 to 300) °C	0.1 °C		
	(300 to 400) °C	0.12 °C		
	(400 to 630) °C	0.14 °C		
	(630 to 800) °C	0.27 °C		
Pt 3926 (100 Ω)	(-200 to 0) °C	0.06 °C		
	(0 to 100) °C	0.08 °C		
	(100 to 300) °C	0.1 °C		
	(300 to 400) °C	0.12 °C		
	(400 to 630) °C	0.14 °C		
Pt 3916 (100 Ω)	(-200 to -190) °C	0.29 °C		
	(-190 to -80) °C	0.05 °C		
	(-80 to 0) °C	0.06 °C		
	(0 to 100) °C	0.07 °C		
	(100 to 260) °C	0.08 °C		
	(260 to 300) °C	0.09 °C		
	(300 to 400) °C	0.1 °C		
	(400 to 600) °C	0.12 °C		
	(600 to 630) °C	0.27 °C		
Pt 385 (200 Ω)	(-200 to 100) °C	0.05 °C		
	(100 to 260) °C	0.06 °C		
	(260 to 300) °C	0.14 °C		
	(300 to 400) °C	0.15 °C		
	(400 to 600) °C	0.16 °C		
	(600 to 630) °C	0.18 °C		
Pt 385 (500 Ω)	(-200 to 080) °C	0.05 °C		
	(-80 to 100) °C	0.06 °C		
	(100 to 260) °C	0.07 °C		
	(260 to 400) °C	0.09 °C		
	(400 to 600) °C	0.1 °C		
	(600 to 630) °C	0.13 °C		



PARAMETER / EQUIPMENT	RANGE	CALIBRATION & MEASUREMENT CAPABILITY [EXPRESSED AS UNCERTAINTY(+)]	REFERENCE STANDARD OR EQUIPMENT	METHOD(S)
Electrical Simulation of RTDs (cont.) Pt 385 (1 000 Ω)	(-200 to 0) °C (0 to 100) °C (100 to 260) °C (260 to 300) °C (300 to 600) °C (600 to 630) °C	0.03 °C 0.05 °C 0.06 °C 0.07 °C 0.08 °C 0.27 °C	Fluke 5520A/SC 1100	OEM, GIDEP, and Laboratory Developed Procedures
PtNi 120 (120 Ω)	(-80 to 100) °C (100 to 260) °C	0.09 °C 0.16 °C		
Calibration of Oscilloscopes Amplitude - DC Signal				
into 50 Ω Load	(-6.6 to 6.6) V	2.5 mV/V + 40 μV		
into 1 MΩ Load	(-130 to 130) V	500 μV/V + 40 μV		
Amplitude – Square Wave 50 Ω Load	±1 mV to ±6.6 V p-p 10 Hz to 10 kHz	2.5 mV/V + 40 μV		
1 MΩ Load	±1 mV to ±130 V p-p 10 Hz to 1 kHz (1 to 10) kHz	1 mV/V + 40 μV 2.5 mV/V + 40 μV		
Rise Time	<300 ps	+0 ps/ -100 ps		
Leveled Sine Wave Relative to 50 kHz [5 mV to 5.5 V] p-p	50 kHz to 100 MHz (100 to 300) MHz (300 to 600) MHz	35 μV/V + 300 μV 40 μV/V + 300 μV 60 μV/V + 300 μV		

PARAMETER / EQUIPMENT	RANGE	CALIBRATION & MEASUREMENT CAPABILITY [EXPRESSED AS UNCERTAINTY(+)]	REFERENCE STANDARD OR EQUIPMENT	METHOD(S)
Calibration of Oscilloscopes (cont.) Time Marker into 50 Ω Load-Source Edge Specs into 50 Ω Load-Source Rise Time 50 Ω load Range (p-p) Wave Generator – Source Amplitude (10 Hz to 10 kHz) Square, Sine, Triangle into 1 MΩ Square, Sine, Triangle into 50 Ω	5 s to 50 ms 20 ms to 2 ns ≤ 350 ps 5.0 mV to 2.5 V 1.8 mV to 55 Vp-p 1.8 mV to 2.5 Vp-p	(25 + 1 000t) parts in 10 ⁶ 2.5 parts in 10 ⁶ (0 /-100) ps 20 mV/V + 200 μV 30 mV/V + 100 μV 30 mV/V + 100 μV	Fluke 5520A/SC 1100	OEM, GIDEP, and Laboratory Developed Procedures

II. Time & Frequency

PARAMETER / EQUIPMENT	RANGE	CALIBRATION & MEASUREMENT CAPABILITY [EXPRESSED AS UNCERTAINTY(+)]	REFERENCE STANDARD OR EQUIPMENT	METHOD(S)
Frequency - Source	0.01 Hz to 2 MHz	2.5 μHz/Hz + 5 μHz	Fluke 5520A	OEM, GIDEP, and Laboratory Developed Procedures
Frequency - Measure	40 Hz to 10 MHz	0.01% of reading	HP 3458A Opt 002	

III. Dimensional

PARAMETER / EQUIPMENT	RANGE	CALIBRATION & MEASUREMENT CAPABILITY [EXPRESSED AS UNCERTAINTY(+)]	REFERENCE STANDARD OR EQUIPMENT	METHOD(S)
*Single Axis Dimensional Gaging – Outside	Up to 10 in	(13 + 2.2L) μ in	P&W Universal Supermicrometer	OEM, GIDEP, and Laboratory Developed Procedures
*Thread Plug Gage- Simple Pitch Diameter	Up to 4 in	26.4 μ in	P&W Supermicrometer with Thread Wires	
Micrometers	Up to 4 in (4 to 20) in (20 to 48) in	(54.7 + 7L) μ in (23 + 14.7L) μ in 964 μ in	Grade 2 Gage Blocks with Optical Flats	
Calipers	Up to 4 in (4 to 20) in (20 to 48) in	(54.7 + 7L) μ in (70.9 + 13L) μ in 960 μ in	Grade 2 Gage Blocks	
Height Gages	Up to 4 in (4 to 20) in (20 to 48) in	(54.7 + 7L) μ in (23 + 14.7L) μ in 964 μ in	Grade 2 Gage Blocks with Surface Plate	
Indicators	Up to 4 in	(9.2 + 13.2L) μ in	Grade 2 Gage Blocks	

Notes:

1. Calibration and Measurement Capabilities (CMC) (Expanded Uncertainties) are based on approximately a 95% confidence interval, using a coverage of $k=2$.
2. This laboratory's capabilities include in-laboratory and field (on-site) calibration services. Since field conditions are typically more variable than those in the laboratory, larger measurement uncertainties are expected in the field than what is reported on the accredited scope.
3. Capabilities denoted with an asterisk (*) are laboratory-only, not available for field calibration activity.
4. CMC for Electromagnetic – DC/Low Frequency do not include possible contributions to uncertainty from the unit under test.
5. The use of (L) signifies an expression of Length in inches.
6. This scope is part of and must be included with the Certificate of Accreditation No. AC - 1273



Vice President

