



# CERTIFICATE OF ACCREDITATION

## ANSI-ASQ National Accreditation Board

500 Montgomery Street, Suite 625, Alexandria, VA 22314, 877-344-3044

This is to certify that

**Wilmington Instrument Company, Inc.**  
**332 North Fries Ave**  
**Wilmington, CA 90744**

has been assessed by ANAB  
and meets the requirements of international standard

**ISO/IEC 17025:2005**

and national standard

**ANSI/NCSL Z540-1-1994**

while demonstrating technical competence in the field(s) of

**CALIBRATION**

Refer to the accompanying Scope(s) of Accreditation for information regarding the types of calibrations and/or tests to which this accreditation applies.

AC-1577

Certificate Number

ANAB Approval

Valid to: 10/27/2017

Version No. 001

Issued: 09/14/2015



This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005. 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 January 2009).



# ANSI-ASQ National Accreditation Board

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

### Wilmington Instrument Company, Inc.

www.calcert.com

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### CALIBRATION

Valid to: October 27, 2017

Certificate Number: AC-1577

#### 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 kV	8.2 $\mu$ V/V + 0.40 $\mu$ V 5.5 $\mu$ V/V + 0.70 $\mu$ V 3.5 $\mu$ V/V + 2.5 $\mu$ V 3.6 $\mu$ V/V + 4 $\mu$ V 5 $\mu$ V/V + 40 $\mu$ V 7.0 $\mu$ V/V + 0.40 mV	Fluke 5720A	OEM or GIDEP Sourced or Wilmington Procedures
DC Voltage - Measure	Up to 100 mV 100 mV to 1 V (1 to 10)V (10 to 100)V 100 V to 1 kV	11 $\mu$ V/V + 0.30 $\mu$ V 8.1 $\mu$ V/V + 0.30 $\mu$ V 8 $\mu$ V/V + 0.50 $\mu$ V 10 $\mu$ V/V + 30 $\mu$ V 10 $\mu$ V/V + 0.10 mV	HP 3458A	
DC Current - Source	Up to 220 $\mu$ A 220 $\mu$ A to 2.2 mA (2.2 to 22) mA (22 to 220) mA 220 mA to 2.2 A	42 $\mu$ A/A + 6 nA 36 $\mu$ A/A + 7 nA 36 $\mu$ A/A + 0.40 $\mu$ A 50 $\mu$ A/A + 0.70 $\mu$ A 82 $\mu$ A/A + 12 $\mu$ A	Fluke 5720A	
*DC Current - Source Clamp-On Only	(3 to 20) A (550 to 1 000) A	1.1 mA/A + 0.75 mA 2.2 mA/A + 0.75 mA	Fluke 5520A Fluke 5520A with Coil	
DC Current - Measure	100 nA to 1 $\mu$ A (1 to 10) $\mu$ A (10 to 100) $\mu$ A 100 $\mu$ A to 1 mA (1 to 10) mA (10 to 100) mA 100 mA to 1A	23 $\mu$ A/A + 40 pA 24 $\mu$ A/A + 0.10 nA 21 $\mu$ A/A + 0.80 nA 21 $\mu$ A/A + 5 nA 21 $\mu$ A/A + 50 nA 35 $\mu$ A/A + 0.50 $\mu$ A 0.11 mA/A + 10 $\mu$ A	HP 3458A	



PARAMETER/ EQUIPMENT	RANGE	CALIBRATION & MEASUREMENT CAPABILITY [EXPRESSED AS UNCERTAINTY(±)]	REFERENCE STANDARD OR EQUIPMENT	METHOD(S)
DC Resistance- Source	Up to 11 Ω (11 to 33) Ω (33 to 110) Ω (110 to 330) Ω 330 Ω to 1.1 kΩ (1.1 to 3.3) kΩ (3.3 to 11) kΩ (11 to 33) kΩ (33 to 110) kΩ (110 to 330) kΩ 330 kΩ to 1.1 MΩ 1.1 MΩ to 3.3 MΩ (3.3 to 11) MΩ (11 to 33) MΩ (33 to 110) MΩ (110 to 330) MΩ 330 MΩ to 1.1GΩ	42 μΩ/Ω + 1 mΩ 30 μΩ/Ω + 1.5 mΩ 28 μΩ/Ω + 1.4 mΩ 29 μΩ/Ω + 2 mΩ 28 μΩ/Ω + 2 mΩ 29 μΩ/Ω + 20 mΩ 29 μΩ/Ω + 20 mΩ 29 μΩ/Ω + 0.20 Ω 30 μΩ/Ω + 0.20 Ω 33 μΩ/Ω + 2 Ω 42 μΩ/Ω + 2 Ω 64 μΩ/Ω + 30 Ω 0.14 mΩ/Ω + 50 Ω 0.27 mΩ/Ω + 2.5 kΩ 0.50 mΩ/Ω + 3 kΩ 36 mΩ/Ω + 0.10 MΩ 0.12 Ω/Ω + 0.50 MΩ	Fluke 5520A	OEM or GIDEP Sourced or Wilmington Procedures
*DC Resistance - Source Fixed Values	1, 1.9 Ω 1.9, 10 Ω 10, 100 Ω 100 Ω, 1 kΩ 1, 10 kΩ 10, 100 kΩ 100 kΩ, 1 MΩ 1, 10 MΩ 10, 19 MΩ 19, 100 MΩ	0.11 mΩ/Ω 24 μΩ/Ω 11 μΩ/Ω 8.8 μΩ/Ω 9.6 μΩ/Ω 12 μΩ/Ω 27 μΩ/Ω 43 μΩ/Ω 52 μΩ/Ω 0.12 mΩ/Ω	Fluke 5720A	
DC Resistance - Measure	(1 to 10) Ω (10 to 100) Ω 100 Ω to 1 kΩ (1 to 10) kΩ (10 to 100) kΩ 100 kΩ to 1 MΩ (1 to 10) MΩ (10 to 100) MΩ 100 MΩ to 1 GΩ	18 μΩ/Ω + 50 μΩ 13 μΩ/Ω + 0.50 mΩ 11 μΩ/Ω + 500 μΩ 11 μΩ/Ω + 5 mΩ 11 μΩ/Ω + 50 mΩ 18 μΩ/Ω + 2 Ω 56 μΩ/Ω + 0.10 kΩ 0.52 mΩ/Ω + 1 kΩ 5.4 mΩ/Ω + 10 kΩ	HP 3458A	

PARAMETER/ EQUIPMENT	RANGE	CALIBRATION & MEASUREMENT CAPABILITY [EXPRESSED AS UNCERTAINTY(±)]	REFERENCE STANDARD OR EQUIPMENT	METHOD(S)
AC Voltage - Source	<p><b>Up to 2.2 mV</b>  (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><b>(2.2 to 22) mV</b>  (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><b>(22 to 220) mV</b>  (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><b>220 mV to 2.2 V</b>  (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>0.39 mV/V + 4 μV  0.32 mV/V + 4 μV  0.32 mV/V + 4 μV  0.37 mV/V + 4 μV  0.59 mV/V + 5 μV  1.1 mV/V + 10 μV  1.4 mV/V + 20 μV  2.7 mV/V + 20 μV</p> <p>0.26 mV/V + 4 μV  0.21 mV/V + 4 μV  90 μV/V + 4 μV  0.21 mV/V + 4 μV  0.55 mV/V + 5 μV  1.1 mV/V + 10 μV  1.5 mV/V + 20 μV  2.7 mV/V + 20 μV</p> <p>0.25 mV/V + 12 μV  0.10 mV/V + 7 μV  0.10 mV/V + 7 μV  0.21 mV/V + 7 μV  0.50 mV/V + 17 μV  0.91 mV/V + 20 μV  1.4 mV/V + 25 μV  2.7 mV/V + 45 μV</p> <p>0.24 mV/V + 40 μV  90 μV/V + 15 μV  50 μV/V + 8 μV  77 μV/V + 10 μV  0.12 mV/V + 30 μV  0.42 mV/V + 80 μV  1.0 mV/V + 0.20 mV  1.7 mV/V + 0.30 mV</p>	Fluke 5720A	OEM or GIDEP Sourced or Wilmington Procedures

PARAMETER/ EQUIPMENT	RANGE	CALIBRATION & MEASUREMENT CAPABILITY [EXPRESSED AS UNCERTAINTY(±)]	REFERENCE STANDARD OR EQUIPMENT	METHOD(S)
AC Voltage - Source (cont.)	<b>(2.2 to 22) V</b> (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 <b>(22 to 220) V</b> (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 <b>220 V to 1.1 kV</b> (15 to 50) Hz (50 Hz to 1 KHz)	0.26 mV/V + 0.40 mV 96 μV/V + 0.15 mV 59 μV/V + 50 μV 86 μV/V + 0.10 mV 0.11 mV/V + 0.20 mV 0.28 mV/V + 0.60 mV 1 mV/V + 2.0 mV 1.6 mV/V + 3.2 mV  0.25 mV/V + 4.0 mV 0.10 mV/V + 1.5 mV 64 μV/V + .6.0 mV 91 μV/V + 1.0 mV 0.19 mV/V + 2.5 mV 0.91 mV/V + 16 mV 4.4 mV/V + 40 mV 8.0 mV/V + 80 mV  0.28 mV/V + 16 mV 77 μV/V + 3.5 mV	Fluke 5720A	OEM or GIDEP Sourced or Wilmington Procedures
AC Voltage - Source Wideband Amplitude 30 Hz to 500 kHz	300 μV to 1.1 mV (1.1 to 3) mV (3 to 11) mV (11 to 33) mV (33 to 110) mV (110 to 330) mV 330 mV to 1.1 V (1.1 to 3.5) V	8.3 mV/V + 2 μV 7.3 mV/V + 3 μV 7.1 mV/V + 8 μV 6.1 mV/V + 16 μV 6.1 mV/V + 40 μV 5.2 mV/V + 0.10 mV 5.1 mV/V + 0.40 mV 4.0 mV/V + 0.50 mV		
AC Voltage - Source Wideband Flatness	<b>Up to 1.1 mV</b> (10 to 30) Hz (30 to 120) Hz 120 Hz to 1.2 kHz (1.2 to 12) kHz (12 to 120) kHz 120 kHz to 1.2 MHz (1.2 to 2) MHz (2 to 10) MHz (10 to 20) MHz (20 to 30) MHz	3 mV/V 1.2 mV/V 1.1 mV/V 1.1 mV/V 1.1 mV/V 2.4 mV/V + 3 μV 2.3 mV/V + 3 μV 4.1 mV/V + 3 μV 6.2 mV/V + 3 μV 17 mV + 15 μV		

PARAMETER/ EQUIPMENT	RANGE	CALIBRATION & MEASUREMENT CAPABILITY [EXPRESSED AS UNCERTAINTY(±)]	REFERENCE STANDARD OR EQUIPMENT	METHOD(S)
AC Voltage - Source Wideband Flatness (cont.)	<b>(1.1 to 3) mV</b> (10 to 30) Hz (30 to 120) Hz 120 Hz to 1.2 kHz (1.2 to 12) kHz (12 to 120) kHz 120 kHz to 1.2 MHz (1.2 to 2) MHz (2 to 10) MHz (10 to 20) MHz <b>(3 to 3.5) mV</b> (10 to 30) Hz (30 to 120) Hz 120 Hz to 1.2 kHz (1.2 to 12) kHz (12 to 120) kHz 120 kHz to 1.2 MHz (1.2 to 2) MHz (2 to 10) MHz (10 to 20) MHz	3 mV/V 1.1 mV/V 1.1 mV/V 1.1 mV/V 1.1 mV/V 1.1 mV/V + 3 μV 1.2 mV/V + 3 μV 3.3 mV/V + 3 μV 5.3 mV/V + 3 μV  3.1 mV/V 1.1 mV/V 1.1 mV/V 1.1 mV/V 1.1 mV/V 1.1 mV/V + 3 μV 1.1 mV/V + 3 μV 2.4 mV/V + 3 μV 4.9 mV/V + 3 μV	Fluke 5720A	OEM or GIDEP Sourced or Wilmington Procedures
AC Voltage - Measure	<b>Up to 10 mV</b> (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 <b>(10 to 100) mV</b> (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 2) MHz	0.31 mV/V + 3.0 μV 0.22 mV/V + 1.1 μV 0.33 mV/V + 1.1 μV 1.1 mV/V + 1.1 μV 5.1 mV/V + 1.1 μV 40 mV/V + 2 μV  87 μV/V + 4 μV 87 μV/V + 2 μV 0.15 mV/V + 2 μV 0.31 mV/V + 2 μV 0.84 mV/V + 2 μV 3.1 mV/V + 10 μV 11 mV/V + 10 μV 15 mV/V + 10 μV	HP 3458A	



PARAMETER/ EQUIPMENT	RANGE	CALIBRATION & MEASUREMENT CAPABILITY [EXPRESSED AS UNCERTAINTY(±)]	REFERENCE STANDARD OR EQUIPMENT	METHOD(S)
AC Voltage - Measure (cont.)	<b>100 mV to 1 V</b> (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 2) MHz <b>(1 to 10) V</b> (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 2) MHz <b>(10 to 100) V</b> (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 <b>(100 to 700) V</b> (1 to 40) Hz 40 Hz to 1 kHz (1 to 20) kHz (20 to 50) kHz (50 to 100) kHz	77 μV/V + 40 μV 77 μV/V + 20 μV 0.15 mV/V + 20 μV 0.31 mV/V + 20 μV 0.81 mV/V + 20 μV 3 mV/V + 0.10 mV 10 mV/V + 0.10 mV 15 mV/V + 0.10 mV  82 μV/V + 0.40 mV 77 μV/V + 0.20 mV 0.15 mV/V + 0.20 mV 0.31 mV/V + 0.20 mV 0.81 mV/V + 0.20 mV 3 mV/V + 1 mV 10 mV/V + 1 mV 15 mV/V + 1 mV  0.21 mV/V + 4 mV 0.21 mV/V + 2 mV 0.21 mV/V + 2 mV 0.36 mV/V + 2 mV 1.2 mV/V + 2 mV 4 mV/V + 10 mV 15 mV/V + 10 mV  0.42 mV/V + 40 mV 0.42 mV/V + 20 mV 0.62 mV/V + 20 mV 1.2 mV/V + 20 mV 3 mV/V + 20 mV	HP 3458A	OEM or GIDEP Sourced or Wilmington Procedures
AC Current - Source	<b>Up to 330 μA</b> (10 to 20) Hz (20 to 45) Hz (45 Hz to 1 kHz) (1 to 5) kHz (5 to 10) kHz (10 to 30) kHz	2 mA/A + 0.10 μA 1.5 mA/A + 0.10 μA 1.5 mA/A + 0.10 μA 3 mA/A + 0.15 μA 8.2 mA/A + 0.20 μA 16 mA/A + 0.40 μA	Fluke 5520A	





PARAMETER/ EQUIPMENT	RANGE	CALIBRATION & MEASUREMENT CAPABILITY [EXPRESSED AS UNCERTAINTY(±)]	REFERENCE STANDARD OR EQUIPMENT	METHOD(S)
AC Current - Source (cont.)	<b>(10 to 220) µA</b> (10 to 20) Hz (20 to 40) Hz 40 Hz to 1 kHz (1 to 5) kHz (5 to 10) kHz <b>220 µA to 2.2 mA</b> (10 to 20) Hz (20 to 40) Hz 40 Hz to 1 kHz (1 to 5) kHz (5 to 10) kHz <b>(2.2 to 22) mA</b> (10 to 20) Hz (20 to 40) Hz 40 Hz to 1 kHz (1 to 5) kHz (5 to 10) kHz <b>(22 to 220) mA</b> (10 to 20) Hz (20 to 40) Hz 40 Hz to 1 kHz (1 to 5) kHz (5 to 10) kHz <b>220 mA to 2.2 A</b> 20 Hz to 1 kHz (1 to 5) kHz (5 to 10) kHz	0.26 mA/A + 16 nA 0.17 mA/A + 10 nA 0.14 mA/A + 8 nA 0.32 mA/A + 12 nA 1.4 mA/A + 65 nA  0.26 mA/A + 40 nA 0.16 mA/A + 35 nA 0.12 mA/A + 35 nA 0.21 mA/A + 0.11 µA 1.1 mA/A + 0.65 µA  0.26 mA/A + 0.40 µA 0.17 mA/A + 0.35 µA 0.12 mA/A + 0.35 µA 0.21 mA/A + 0.55 µA 1.1 mA/A + 5 µA  0.26 mA/A + 4 µA 0.17 mA/A + 3.5 µA 0.13 mA/A + 2.5 µA 0.21 mA/A + 3.5 µA 1.1 mA/A + 10 µA  0.26 mA/A + 35 µA 0.46 mA/A + 80 µA 7.3 mA/A + 0.16 mA	Fluke 5720A	OEM or GIDEP Sourced or Wilmington Procedures
Capacitance - Source	190 pF to 3.3 nF (3.3 to 11) nF (11 to 110) nF (110 to 330) nF 330 nF 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 330 µF to 1.1 mF (1.1 to 3.3) mF	5.7 mF/F + 10 pF 3.0 mF/F + 10 pF 2.8 mF/F + 0.10 nF 2.7 mF/F + 0.30 nF 2.8 mF/F + 1 nF 2.7 mF/F + 3 nF 2.7 mF/F + 10 nF 4.2 mF/F + 30 nF 4.8 mF/F + 0.10 µF 6.1 mF/F + 0.30 µF 4.7 mF/F + 1 µF 4.5 mF/F + 3 µF	Fluke 5520A	

PARAMETER/ EQUIPMENT	RANGE	CALIBRATION & MEASUREMENT CAPABILITY [EXPRESSED AS UNCERTAINTY(±)]	REFERENCE STANDARD OR EQUIPMENT	METHOD(S)
Phase - Source	(10 to 65) Hz (65 to 500) Hz 500 Hz to 1 kHz (1 to 5) kHz (5 to 10) kHz (10 to 30) kHz	0.16 ° 0.28 ° 0.52 ° 2.5 ° 5 ° 10 °	Fluke 5520A	OEM or GIDEP Sourced or Wilmington Procedures
AC Power - Source (45 to 65) Hz; PF = 1	100 W 1 kW 10 kW 100 kW	0.46 W 4.6 W 42 W 0.16 kW		
Frequency - Source	10 MHz	<10 (-11) Locked	Praecis CFR GPS Receiver	
	1 Hz to 2 MHz	2.6 µHz/Hz + 5 µHz	Fluke 5520A SC1100	
<b>Oscilloscopes</b> Amplitude DC Signal 50 Ω Load	0 to 6.6 V 10 Hz to 10 KHz	2.6 mV/V + 40 µV	Fluke 5520A SC1100	
1 MΩ Load	0 to 130 V 10 Hz to 10 KHz	0.50 mV/V + 40 µV		
Amplitude Square Wave 50 Ω Load	<b>1 mV to 6.6 V</b> (10 Hz to 10 kHz)	3.2 mV/V + 40 µV		
1 MΩ Load	<b>1 mV to 130 V p-p</b> (10 Hz to 10 kHz)	1.1 mV/V + 40 µV		
Leveled Sine Wave Flatness (Relative to 50 kHz)	<b>5 mV to 5.5 V</b> 50 kHz to 100 MHz (100 to 300) MHz (300 to 600) MHz	15 mV/V + 0.10 mV 20 mV/V + 0.10 mV 40 mV/V + 0.10 mV		
Time Mark into 50 Ω	<b>5 mV to 3.5 V</b> (600 to 1100) MHz	52 mV/V + 0.10 mV		
Edge Spec into 50Ω Load: Rise Time Amplitude (P to P) Frequency	5s to 50 ms	(25 + 1 000t) µs/s		
	20 ms to 100 ns	2.5 µs/s		
	(50 to 20 ns)	2.5 µs/s		
	10 ns	2.5 µs/s		
	(5 to 1) ns	2.5 µs/s		
	≤350 ps	3.5 %		
	5 mV to 2.5 V	20 mV/V + 0.20 mV		
	1 kHz to 10 MHz	2.5 µs/s of setting		

PARAMETER/ EQUIPMENT	RANGE	CALIBRATION & MEASUREMENT CAPABILITY [EXPRESSED AS UNCERTAINTY(±)]	REFERENCE STANDARD OR EQUIPMENT	METHOD(S)
Electrical Simulation Of Thermocouples				
Type E	(-250 to -100) °C	0.5 °C		
	(-100 to -25) °C	0.2 °C		
	(-25 to 350) °C	0.2 °C		
	(350 to 650) °C	0.2 °C		
	(650 to 1 000) °C	0.3 °C		
Type J	(-210 to -100) °C	0.3 °C		
	(-100 to -30) °C	0.2 °C		
	(-30 to 150) °C	0.2 °C		
	(150 to 760) °C	0.2 °C		
	(760 to 1 200) °C	0.3 °C		
Type K	(-200 to -100) °C	0.4 °C		
	(-100 to -25) °C	0.2 °C		
	(-25 to 120) °C	0.2 °C		
	(120 to 1 000) °C	0.3 °C		
	(1 000 to 1 372) °C	0.4 °C		
Type R	(0 to 250) °C	0.6 °C		
	(250 to 400) °C	0.4 °C		
	(400 to 1 000) °C	0.4 °C		
	(1 000 to 1 767) °C	0.4 °C		
Type S	(0 to 250) °C	0.5 °C		
	(250 to 1 000) °C	0.4 °C		
	(1 000 to 1 400) °C	0.4 °C		
	(1 400 to 1 767) °C	0.5 °C		
Type T	(-250 to -150) °C	0.7 °C		
	(-150 to 0) °C	0.3 °C		
	(0 to 120) °C	0.2 °C		
	(120 to 400) °C	0.2 °C		
			Fluke 5520A	OEM or GIDEP Sourced or Wilmington Procedures

PARAMETER/ EQUIPMENT	RANGE	CALIBRATION & MEASUREMENT CAPABILITY [EXPRESSED AS UNCERTAINTY(±)]	REFERENCE STANDARD OR EQUIPMENT	METHOD(S)
Electrical Simulation of RTDs Pt 385 (100 Ω)	(-200 to 0) °C (0 to 100) °C (100 to 300) °C (300 to 400) °C (400 to 630) °C (630 to 800) °C	0.06 °C 0.07 °C 0.09 °C 0.1 °C 0.2 °C 0.3 °C	Fluke 5520A	OEM or GIDEP Sourced or Wilmington Procedures
Pt 385 (200 Ω)	(-200 to 100) °C (100 to 260) °C (260 to 300) °C (300 to 400) °C (400 to 600) °C (600 to 630) °C	0.05 °C 0.06 °C 0.2 °C 0.2 °C 0.2 °C 0.2 °C		
Pt 385 (500 Ω)	(-200 to -80) °C (-80 to 100) °C (100 to 260) °C (260 to 400) °C (400 to 600) °C (600 to 630) °C	0.05 °C 0.06 °C 0.06 °C 0.08 °C 0.09 °C 0.2 °C		
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	0.04 °C 0.05 °C 0.06 °C 0.06 °C 0.07 °C 0.3 °C		
Pt 3916 (100 Ω)	(-190 to -80) °C (-80 to 0) °C (0 to 100) °C (100 to 260) °C (260 to 300) °C (300 to 400) °C (400 to 600) °C (600 to 630) °C	0.05 °C 0.06 °C 0.07 °C 0.08 °C 0.09 °C 0.1 °C 0.1 °C 0.3 °C		
Pt 3926 (100 Ω)	(-200 to 0) °C (0 to 100) °C (100 to 300) °C (300 to 400) °C (400 to 630) °C	0.06 °C 0.08 °C 0.1 °C 0.1 °C 0.2 °C		

## II. Mechanical

PARAMETER/ EQUIPMENT	RANGE	CALIBRATION & MEASUREMENT CAPABILITY [EXPRESSED AS UNCERTAINTY(±)]	REFERENCE STANDARD OR EQUIPMENT	METHOD(S)
Pressure-Hydraulic	(50 to 300) psi	0.04 psi	Ruska 2400	OEM or GIDEP Sourced or Wilmington Procedures
	(300 to 500) psi	0.05 psi		
Pressure - Pneumatic	(500 to 1 000) psi	0.15 psi	Pressurements P3025-3	
	(1 000 to 2 000) psi	0.24 psi		
	(2 000 to 5 000) psi	0.53 psi		
	(5 000 to 10 000) psi	1.1 psi		
	(5 to 30) in Hg	0.007 in Hg		
	(10 to 100) psi	0.01 psi		
	(100 to 300) psi	0.03 psi		
	(300 to 400) psi	0.04 psi		
	(400 to 500) psi	0.05 psi		

## III. Thermodynamic

PARAMETER/ EQUIPMENT	RANGE	CALIBRATION & MEASUREMENT CAPABILITY [EXPRESSED AS UNCERTAINTY(±)]	REFERENCE STANDARD OR EQUIPMENT	METHOD(S)
Temperature - Source	(-196 to -80) °C	0.02 °C	Hart 7380, 6022 Hart 5628/Hart 2560	OEM or GIDEP Sourced or Wilmington Procedures
	(-80 to 0) °C	0.03 °C		
	(0 to 100) °C	0.01 °C		
	(100 to 200) °C	0.02 °C		
	(200 to 300) °C	0.02 °C		
	(300 to 400) °C	0.61 °C		
	(400 to 500) °C	0.71 °C		
	(500 to 600) °C	0.81 °C		

PARAMETER/ EQUIPMENT	RANGE	CALIBRATION & MEASUREMENT CAPABILITY [EXPRESSED AS UNCERTAINTY(±)]	REFERENCE STANDARD OR EQUIPMENT	METHOD(S)
Temperature – Measure	(-200 to -80) °C	0.01 °C	Hart 5628/Hart 2560	OEM or GIDEP Sourced or Wilmington Procedures
	(-80 to 0) °C	0.01 °C		
	(0 to 100) °C	0.01 °C		
	(100 to 200) °C	0.02 °C		
	(200 to 400) °C	0.02 °C		
	(400 to 500) °C	0.04 °C		
	(500 to 600) °C	0.05 °C		
	(-200 to -80) °C	0.01 °C	Hart 5628/Hart 1502	
	(-80 to 0) °C	0.01 °C		
	( 0 to 100) °C	0.01 °C		
	(100 to 200)°C	0.02 °C		
	(200 to 300) °C	0.03 °C		
	(300 to 400) °C	0.03 °C		
	(400 to 500) °C	0.04 °C		
(500 to 600) °C	0.05 °C			

Notes: 1. Calibration and Measurement Capabilities (Expanded Uncertainties) are based on approximately a 95% confidence interval, using a coverage of k=2.  
2. This scope is formatted as part of single document including the Certificate of Accreditation No.AC-1577.

*Keith Greenway*

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Vice President