



Calibration
Certificate No. 1750.01

Calibration complies with ISO/IEC
17025, ANSI/NCSL Z540-1, and 9001



Cert. No.: 4040-8827585

Traceable® Certificate of Calibration for Therm./Clock/Humidity Monitor

Manufactured for and distributed by: VWR International, LLC, Radnor Corporate Center, Bldg 1, Ste 200, 100 Matsonford Road, Radnor, PA

Instrument Identification:

Model: 62344-734 S/N: 170663020 Manufacturer: Control Company

Standards/Equipment:

Description	Serial Number	Due Date	NIST Traceable Reference
Chilled Mirror Hygrometer	31874/H2048MCR	10/19/17	14489
Digital Thermometer	221197993	10/04/17	4000-8017448
Non-contact Frequency Counter	26.6 2025	3/27/18	1000406563

Certificate Information:

Technician: 126 Procedure: CAL-17 Cal Date: 9/07/17 Due Date: 9/07/19
Test Conditions: 23.9°C 55.0 %RH 1018 mBar

Calibration Data: (New Instrument)

Unit(s)	Nominal	As Found	In Tol	Nominal	As Left	In Tol	Min	Max	±U	TUR
°C		N.A.		24.97	24.3	Y	24.0	26.0	0.059	>4:1
%RH		N.A.		46.18	50	Y	41	51	1.3	3.8:1
Sec/24hr		N.A.		0.000	-0.500	Y	-8.640	8.640	0.13	>4:1

This Instrument was calibrated in compliance with ISO/IEC 17025:2005 and ANSI/NCSL Z540-1-1994 Part 1.

A Test Uncertainty Ratio of at least 4:1 is maintained unless otherwise stated and is calculated using the expanded measurement uncertainty. Uncertainty evaluation includes the instrument under test and is calculated in accordance with the ISO "Guide to the Expression of Uncertainty in Measurement" (GUM). The uncertainty represents an expanded uncertainty using a coverage factor k=2 to approximate a 95% confidence level. In tolerance conditions are based on test results falling within specified limits with no reduction by the uncertainty of the measurement. The results contained herein relate only to the item calibrated. This certificate shall not be reproduced except in full, without written approval of Control Company.

The calibration results published in this certificate were obtained using equipment capable of producing results that are traceable to NIST and through NIST to the International System of Units

Nominal=Standard's Reading; As Left=Instrument's Reading; In Tol=In Tolerance; Min/Max=Acceptance Range; ±U=Expanded Measurement Uncertainty; TUR=Test Uncertainty Ratio; Accuracy=±(Max-Min)/2; Min = As Left Nominal(Rounded) - Tolerance; Max = As Left Nominal(Rounded) + Tolerance; Date=MM/DD/YY

Nicol Rodriguez
Nicol Rodriguez, Quality Manager

Aaron Judice
Aaron Judice, Technical Manager

Maintaining Accuracy:

In our opinion once calibrated your Therm./Clock/Humidity Monitor should maintain its accuracy. There is no exact way to determine how long calibration will be maintained. Therm./Clock/Humidity Monitors change little, if any at all, but can be effected by aging, temperature, shock, and contamination.

Recalibration:

This device was calibrated using a single test point. Should additional test points be required, please contact Control Company for factory calibration and re-certification traceable to National Institute of Standards and Technology.

CONTROL COMPANY 12554 Galveston RD Suite B230 Webster TX USA 77598

Phone 281 482-1714 Fax 281 482-9448 service@control3.com www.control3.com

Control Company is an ISO 17025:2005 Calibration Laboratory Accredited by (A2LA) American Association for Laboratory Accreditation, Certificate No. 1750.01.

Control Company is ISO 9001:2008 Quality Certified by (DNV) Det Norske Veritas, Certificate No. CERT-01805-2006-AQ-HOU-RvA.

International Laboratory Accreditation Cooperation (ILAC) - Multilateral Recognition Arrangement (MRA).



ABSOLUTE PROCESS INSTRUMENTS

CECOMP[®]

Sensors to Solutions

1220 American Way, Libertyville IL 60048 USA

api-usa.com 800-942-0315 · 847-918-3510 800-949-7502

Calibration Report

Serial Number: 9735901001

Date Calibrated: 07/22/2019

Model Number: DPG1000L200PSIG-NC

Ambient Temperature: 76.7°F

Input: 0 to 199.9 psi

Display: 0 to 199.9 psi

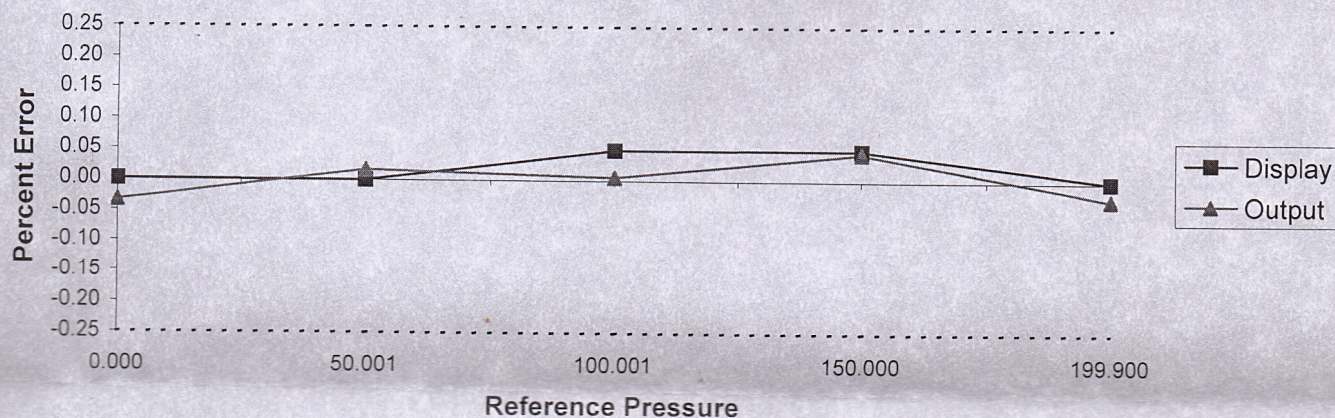
Tolerance: 0.25 %FS

Output: 4 to 20 mA

Data Type: As Left

Step	Applied psi	Displayed psi	Display %FS Error	Output mA	Equivalent psi	Output %FS Error
1	0.000	0	0.0001	3.9945	-0.103	-0.0341
2	50.001	50	-0.0003	8.0026	75.049	0.0163
3	100.001	100.1	0.0497	12.0009	150.016	0.0054
4	150.000	150.1	0.0500	16.0073	225.136	0.0452
5	199.900	199.9	-0.0002	19.9954	299.914	-0.0285

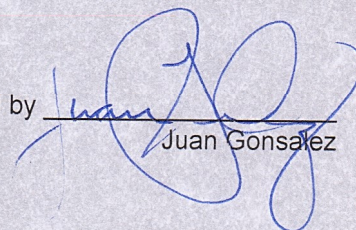
Errors as a Percent of Full Scale



Calibration Standard Information

Pressure Reference	Electrical Reference	Temperature Reference
Model: 7250xi Manufacturer: Ruska Serial Number: 68519 Range: 0 to 300 psi Tolerance: 0.005 %Rdg Last Cert Date: 06/10/2019	Model: Manufacturer: Serial Number: Tolerance: Last Cert Date: //	Model: 62344-734 Manufacturer: Control Company Serial Number: 170663020 Tolerance: 1.8 F Last Cert Date: 09/07/2017

Calibrated by


Juan Gonzalez



Certificate of Calibration

1000209933

Page 1 of 5

Customer Information

Absolute Process Instruments
1220 American Way
Libertyville, IL 60048

PO #: 24330-00
Reference #: 1946533Rg
Account #: 00262
SO #: 46533

Instrument Identification

Instrument Id: **3995013**

Location:

Noun: Multimeter

Model: 8845A

Mfr: Fluke

Serial #: 3995013

Accuracy: See manufacturer's specifications

Certification Information

Reason For Service: Calibration with Data

Technician: Iselyn Pardo

Type Of Calibration: Normal Calibration

Cal Date: 03 MAY 19

As Found Condition: In Tolerance

Cal Due: 03 MAY 20

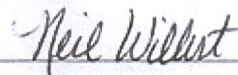
As Left Condition: Left As Found

Temperature: 22.0 °C

Procedure: JH022130094 : Multimeter

Humidity: 29.0 %

- No sampling plan or other procedure was used for this calibration. Measurements and information on this certificate are valid at time of calibration only and any number of factors may cause calibration to drift out of tolerance prior to calibration due date.
- This instrument has been calibrated using standards with accuracies traceable to the National Institute of Standards and Technology, derived from natural physical constants, from ratio measurements, or compared to consensus standards.
- The expanded uncertainty of the measurement process has not exceeded 25% of the tolerance allowed for the individual characteristics measured, unless otherwise stated. The uncertainties are based on a 95% confidence level, K=2.
- Measurement uncertainties are not used in the determination of In or Out of Tolerance of the Unit under test.
- J.H. Metrology Co., Inc's Calibration Control System complies with applicable requirements of ANSI Z540-1-1994, ISO 9001, and ISO/IEC 17025-2005.
- The results contained herein relate only to the item calibrated. This certificate shall not be reproduced except in full, without the written approval of J.H. Metrology Co., Inc.


Approved By: _____ President
Date: May 03, 2019

Calibration Data

✓ In Tolerance ✗ Out of Tolerance

Range	Nominal	As Found	As Left	Min	Max
DC Voltage Accuracy					
0.100	0.0000	0.0007	✓ As Found	-0.0035	0.0035
1	0.000000	0.000001	✓ As Found	-0.000007	0.000007



Certificate of Calibration

1000209933

Page 2 of 5

✓ In Tolerance ✗ Out of Tolerance

Calibration Data

Range	Nominal	As Found		As Left		Min	Max
DC Voltage Accuracy							
10	0.00000	0.00000	✓	As Found		-0.00005	0.00005
100	0.0000	0.0000	✓	As Found		-0.0006	0.0006
1000	0.000	0.000	✓	As Found		-0.010	0.010
0.100	100.0000	100.0019	✓	As Found		99.9915	100.0085
	-100.0000	-99.9979	✓	As Found		-100.0085	-99.9915
1	1.000000	0.999997	✓	As Found		0.999953	1.000047
	-1.000000	-1.000005	✓	As Found		-1.000047	-0.999953
10	5.00000	5.00000	✓	As Found		4.999775	5.000225
	-5.00000	-5.00005	✓	As Found		-5.000225	-4.999775
	10.00000	10.00002	✓	As Found		9.99960	10.00040
	-10.00000	-10.00008	✓	As Found		-10.00040	-9.99960
100	100.0000	100.0000	✓	As Found		99.9949	100.0051
	-100.0000	-100.0005	✓	As Found		-100.0051	-99.9949
1000	1000.000	999.997	✓	As Found		999.945	1000.055
	-1000.000	-1000.001	✓	As Found		-1000.055	-999.945
AC Voltage Accuracy							
0.100V @ 10 Hz	100.0000	99.9802	✓	As Found		99.9000	100.1000
20 kHz	100.0000	99.9884	✓	As Found		99.9000	100.1000
50 kHz	100.0000	100.0064	✓	As Found		99.8300	100.1700
100 kHz	100.0000	100.1660	✓	As Found		99.3200	100.6800
300 kHz	100.0000	100.8594	✓	As Found		95.5000	104.5000
1V @ 10 Hz	1.000000	0.999775	✓	As Found		0.999100	1.000900
20 kHz	1.000000	0.999990	✓	As Found		0.999100	1.000900
50 kHz	1.000000	1.000316	✓	As Found		0.998300	1.001700
100 kHz	1.000000	1.002247	✓	As Found		0.993200	1.006800
300 kHz	1.000000	1.011507	✓	As Found		0.955000	1.045000
10V @ 10 Hz	10.00000	9.99755	✓	As Found		9.99100	10.00900
20 kHz	10.00000	9.99938	✓	As Found		9.99100	10.00900
50 kHz	10.00000	9.99747	✓	As Found		9.98300	10.01700
100 kHz	10.00000	9.99150	✓	As Found		9.93200	10.06800
300 kHz	3.00000	3.00568	✓	As Found		2.83000	3.17000
100V @ 45 Hz	100.0000	99.9795	✓	As Found		99.9100	100.0900
20 kHz	100.0000	99.9937	✓	As Found		99.9100	100.0900
50 kHz	100.0000	99.9838	✓	As Found		99.8300	100.1700



Certificate of Calibration

1000209933

Page 3 of 5

✓ In Tolerance ✗ Out of Tolerance

Calibration Data

Range	Nominal	As Found		As Left		Min	Max
AC Voltage Accuracy							
100 kHz	100.0000	99.9673	✓	As Found		99.3200	100.6800
750V @ 45 Hz	750.000	749.827	✓	As Found		749.325	750.675
1 kHz	750.000	749.987	✓	As Found		749.325	750.675
10 kHz	750.000	749.972	✓	As Found		749.325	750.675
20 kHz	320.000	319.970	✓	As Found		319.583	320.417
50 kHz	320.000	319.941	✓	As Found		319.241	320.759
100 kHz	320.000	319.969	✓	As Found		317.480	322.520
4 Wire Ohms Accuracy							
100	0.0000	0.0040	✓	As Found		-0.0040	0.0040
1 K	0.000000	0.000004	✓	As Found		-0.000010	0.000010
10 K	0.00000	0.00003	✓	As Found		-0.00010	0.00010
100 K	0.0000	0.0002	✓	As Found		-0.0010	0.0010
100	100.0000	100.0040	✓	As Found		99.9860	100.0140
1 K	1.000000	0.999989	✓	As Found		0.999890	1.000110
10 K	10.00000	9.99981	✓	As Found		9.99890	10.00110
100 K	100.0000	99.9983	✓	As Found		99.9890	100.0110
2 Wire Ohms Accuracy							
100	0.0000	0.0026	✓	As Found		-0.0040	0.0040
1 K	0.000000	0.000003	✓	As Found		-0.000010	0.000010
10 K	0.00000	0.00001	✓	As Found		-0.00010	0.00010
100 K	0.0000	0.0002	✓	As Found		-0.0010	0.0010
1 M	0.000000	0.000000	✓	As Found		-0.000010	0.000010
10 M	0.00000	0.00000	✓	As Found		-0.00010	0.00010
100 M	0.0000	0.0000	✓	As Found		-0.0010	0.0010
100	100.0000	99.9958	✓	As Found		99.9860	100.0140
1 K	1.00000	1.000023	✓	As Found		0.999890	1.000110
10 K	10.0000	9.99986	✓	As Found		9.99890	10.00110
100 K	100.0000	99.9988	✓	As Found		99.9890	100.0110
1 M	1.000000	0.999978	✓	As Found		0.999890	1.000110
10 M	10.00000	9.99926	✓	As Found		9.99590	10.00410
100 M	100.0000	99.9205	✓	As Found		99.1900	100.8100
DC Current Accuracy							
100 µA	0.0000	0.0180	✓	As Found		-0.0250	0.0250



Certificate of Calibration

1000209933

Page 4 of 5

✓ In Tolerance ✗ Out of Tolerance

Calibration Data

Range	Nominal	As Found		As Left		Min	Max
DC Current Accuracy							
1 mA	0.000000	0.000016	✓	As Found		-0.000050	0.000050
10 mA	0.000000	0.00166	✓	As Found		-0.00200	0.00200
100 mA	0.0000	0.0015	✓	As Found		-0.0050	0.0050
1 A	0.000000	0.000094	✓	As Found		-0.000200	0.000200
3 A	0.000000	0.00006	✓	As Found		-0.00060	0.00060
10 A	0.000000	0.00010	✓	As Found		-0.00080	0.00080
100 µA	100.0000	100.0115	✓	As Found		99.9350	100.0750
	-100.0000	-99.9937	✓	As Found		-100.0750	-99.9350
1 mA	1.000000	1.000051	✓	As Found		0.999450	1.000550
	-1.000000	-1.000033	✓	As Found		-1.000550	-0.999540
10 mA	10.00000	10.00096	✓	As Found		9.99300	10.00700
	-10.00000	-9.99926	✓	As Found		-10.00700	-9.99300
100 mA	100.0000	100.0010	✓	As Found		99.94500	100.0550
	-100.0000	-99.9986	✓	As Found		-100.0550	-99.9450
1A	1.000000	1.000040	✓	As Found		0.999300	1.000700
	-1.000000	-1.000083	✓	As Found		-1.000700	-0.999300
3A	1.90000	1.90012	✓	As Found		1.89750	1.90250
	-1.90000	-1.90010	✓	As Found		-1.90250	-1.89750
10A	10.0000	9.99946	✓	As Found		9.98300	10.01700
	-10.00000	-9.99963	✓	As Found		-10.01700	-9.98300
AC Current Accuracy							
10 mA @ 10 Hz	10.00000	9.99762	✓	As Found		9.98600	10.01400
1 kHz	10.00000	10.00076	✓	As Found		9.98600	10.01400
5 kHz	10.00000	9.99778	✓	As Found		9.98600	10.01400
10 kHz	10.00000	9.99447	✓	As Found		9.95500	10.04500
100 mA @ 10 Hz	100.0000	99.9549	✓	As Found		99.8600	100.1400
1 kHz	100.0000	100.0069	✓	As Found		99.8600	100.1400
5 kHz	100.0000	99.9841	✓	As Found		99.8600	100.1400
10 kHz	100.0000	99.9545	✓	As Found		99.5500	100.4500
1A @ 45 Hz	1.000000	0.999949	✓	As Found		0.998600	1.001400
1 kHz	1.000000	1.000114	✓	As Found		0.998600	1.001400
5 kHz	1.000000	1.000195	✓	As Found		0.998600	1.001400
10 kHz	1.000000	1.003171	✓	As Found		0.986500	1.010500
1.9A @ 45 Hz	1.90000	1.89969	✓	As Found		1.89535	1.90465



Certificate of Calibration

1000209933

Page 5 of 5

✓ In Tolerance ✗ Out of Tolerance

Calibration Data

Range	Nominal	As Found	As Left	Min	Max
AC Current Accuracy					
1 kHz	1.90000	1.90005	✓ As Found	1.89535	1.90465
10 kHz	1.90000	1.90266	✓ As Found	1.87235	1.92765
10 A @ 45 Hz	10.00000	9.99674	✓ As Found	9.97900	10.02100
1 kHz	10.00000	9.99749	✓ As Found	9.97900	10.02100

End of Datasheet

Calibration Standards

<u>NIST Traceable #</u>	<u>Instrument ID#</u>	<u>Description</u>	<u>Model</u>	<u>Calibration Date</u>	<u>Date Due</u>
1000203583	02007	Calibrator	5520A/SC1.1GHz	11 JUL 2018	31 JUL 2019
1000205362	00890	Reference Multimeter	8508A-01	13 NOV 2018	30 NOV 2019
2022204439	00884	Humidity & Temperature Indicator w/Probe	HMI 41 w/HMP 46	16 OCT 2018	31 OCT 2019