



CALIBRATION REPORT #

PO #

NOVEMBER 3, 2011

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MANUFACTURER:	OHM- LABS, INC.	PROCEDURE:	RS CAL
DESCRIPTION:	RESISTANCE STANDARD	LAB ENVIRONMENT:	23 °C / 36 %RH
MODEL:	1002	CALIBRATION DATE:	03/NOV/2011
SERIAL:		CALIBRATION DUE:	

<u>Applied Current</u>	<u>Measured Value at 23 °C</u>	<u>Uncertainty</u>
2.5 A	9.999 86 mΩ	3.2 μΩ/Ω
5.0	9.999 90	2.5
7.5	9.999 92	2.4
10.0	9.999 94	2.0

<u>STANDARDS USED</u>			
<u>ID</u>	<u>Description</u>	<u>Make & Model</u>	<u>Cal Due</u>
AS3000	RESISTANCE STANDARD	OHM-LABS 200	11/FEB/2012
AS3400	RESISTANCE BRIDGE	GUILDLINE 9975	09/FEB/2012
AS3405	RANGE EXTENDER	GUILDLINE 9923	CAL NR

COMMENTS:

OHM-LABS, INC. CERTIFIES THAT THIS CALIBRATION IS TRACEABLE TO A RECOGNIZED NATIONAL MEASUREMENT INSTITUTE, OR DERIVED BY A RATIO TYPE SELF-CALIBRATION TECHNIQUE, AND IS ACCREDITED TO ISO/IEC 17025. OHM-LABS' QUALITY CONTROL SYSTEM MEETS THE REQUIREMENTS OF ANSI/NCSL Z540-1-1994. THE REPORTED UNCERTAINTIES REPRESENT EXPANDED UNCERTAINTIES EXPRESSED AT A CONFIDENCE LEVEL OF APPROXIMATELY 95 %, USING A COVERAGE FACTOR OF K=2. THIS UNCERTAINTY INCLUDES THE STANDARD DEVIATION OF SEVERAL MEASUREMENT RUNS ON SEPARATE DAYS. IT IS CALCULATED AT THE TIME OF TEST ONLY AND DOES NOT TAKE INTO ACCOUNT TRANSIT, USAGE, DRIFT OVER TIME, OR OTHER FACTORS AFFECTING STABILITY. THIS CERTIFICATE SHALL NOT BE REPRODUCED, EXCEPT IN FULL, WITHOUT WRITTEN PERMISSION BY OHM-LABS, INC.

PERFORMED BY: _____

REVIEWED BY: _____



TEMPERATURE COEFFICIENTS OF RESISTANCE, REFERENCED TO 23 °C, AT 2.5 A

α (ALPHA) = +1.30 E-06

β (BETA) = +1.09 E-07

TABLE OF CORRECTIONS IN PPM FROM MEASURED VALUE AT 23 °C AT 2.5 A

Temp	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
18	-3.78	-3.76	-3.74	-3.71	-3.68	-3.65	-3.62	-3.58	-3.54	-3.50
19	-3.46	-3.42	-3.37	-3.32	-3.27	-3.22	-3.16	-3.11	-3.05	-2.99
20	-2.92	-2.86	-2.79	-2.72	-2.65	-2.57	-2.49	-2.41	-2.33	-2.25
21	-2.17	-2.08	-1.99	-1.90	-1.80	-1.71	-1.61	-1.51	-1.40	-1.30
22	-1.19	-1.08	-0.97	-0.86	-0.74	-0.62	-0.50	-0.38	-0.26	-0.13
23	0.00	0.13	0.26	0.40	0.54	0.68	0.82	0.96	1.11	1.26
24	1.41	1.56	1.72	1.87	2.03	2.19	2.36	2.52	2.69	2.86
25	3.03	3.21	3.39	3.56	3.75	3.93	4.11	4.30	4.49	4.68
26	4.88	5.07	5.27	5.47	5.68	5.88	6.09	6.30	6.51	6.72
27	6.94	7.16	7.38	7.60	7.82	8.05	8.28	8.51	8.74	8.98
28	9.22	9.46	9.70	9.94	10.19	10.44	10.69	10.94	11.20	11.45
29	11.71	11.97	12.24	12.50	12.77	13.04	13.31	13.59	13.87	14.14
30	14.43	14.71	14.99	15.28	15.57	15.86	16.16	16.45	16.75	17.05

TEMPERATURE COEFFICIENTS OF RESISTANCE, REFERENCED TO 23 °C, AT 5.0 A

α (ALPHA) = +1.15 E-06

β (BETA) = -3.26 E-08

TABLE OF CORRECTIONS IN PPM FROM MEASURED VALUE AT 23 °C AT 5.0 A

Temp	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
18	-6.57	-6.42	-6.27	-6.13	-5.98	-5.84	-5.69	-5.55	-5.41	-5.26
19	-5.12	-4.98	-4.84	-4.70	-4.56	-4.42	-4.29	-4.15	-4.01	-3.88
20	-3.74	-3.61	-3.48	-3.34	-3.21	-3.08	-2.95	-2.82	-2.69	-2.56
21	-2.43	-2.30	-2.18	-2.05	-1.92	-1.80	-1.67	-1.55	-1.43	-1.30
22	-1.18	-1.06	-0.94	-0.82	-0.70	-0.58	-0.47	-0.35	-0.23	-0.12
23	0.00	0.11	0.23	0.34	0.45	0.57	0.68	0.79	0.90	1.01
24	1.12	1.23	1.33	1.44	1.55	1.65	1.76	1.86	1.96	2.07
25	2.17	2.27	2.37	2.47	2.57	2.67	2.77	2.87	2.96	3.06
26	3.16	3.25	3.35	3.44	3.53	3.63	3.72	3.81	3.90	3.99
27	4.08	4.17	4.25	4.34	4.43	4.51	4.60	4.68	4.77	4.85
28	4.93	5.02	5.10	5.18	5.26	5.34	5.42	5.50	5.57	5.65
29	5.73	5.80	5.88	5.95	6.02	6.10	6.17	6.24	6.31	6.38
30	6.45	6.52	6.59	6.66	6.72	6.79	6.86	6.92	6.99	7.05

TEMPERATURE COEFFICIENTS OF RESISTANCE, REFERENCED TO 23 °C, AT 7.5 A

α (ALPHA) = +9.50 E-07

β (BETA) = -5.43 E-08

TABLE OF CORRECTIONS IN PPM FROM MEASURED VALUE AT 23 °C AT 7.5 A

Temp	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
18	-6.11	-5.96	-5.81	-5.67	-5.52	-5.38	-5.23	-5.09	-4.95	-4.81
19	-4.67	-4.53	-4.39	-4.26	-4.12	-3.99	-3.86	-3.73	-3.60	-3.47
20	-3.34	-3.21	-3.09	-2.96	-2.84	-2.71	-2.59	-2.47	-2.35	-2.23
21	-2.12	-2.00	-1.89	-1.77	-1.66	-1.55	-1.44	-1.33	-1.22	-1.11
22	-1.00	-0.90	-0.79	-0.69	-0.59	-0.49	-0.39	-0.29	-0.19	-0.10
23	0.00	0.09	0.19	0.28	0.37	0.46	0.55	0.64	0.73	0.81
24	0.90	0.98	1.06	1.14	1.22	1.30	1.38	1.46	1.53	1.61
25	1.68	1.76	1.83	1.90	1.97	2.04	2.10	2.17	2.23	2.30
26	2.36	2.42	2.48	2.54	2.60	2.66	2.72	2.77	2.83	2.88
27	2.93	2.98	3.03	3.08	3.13	3.17	3.22	3.26	3.31	3.35
28	3.39	3.43	3.47	3.51	3.55	3.58	3.62	3.65	3.68	3.71
29	3.74	3.77	3.80	3.83	3.85	3.88	3.90	3.93	3.95	3.97
30	3.99	4.01	4.02	4.04	4.05	4.07	4.08	4.09	4.10	4.11

TEMPERATURE COEFFICIENTS OF RESISTANCE, REFERENCED TO 23 °C, AT 10.0 A

α (ALPHA) = +2.60 E-07

β (BETA) = +5.65 E-08

TABLE OF CORRECTIONS IN PPM FROM MEASURED VALUE AT 23 °C AT 10.0 A

Temp	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
18	0.11	0.08	0.05	0.03	0.00	-0.03	-0.05	-0.07	-0.09	-0.12
19	-0.14	-0.15	-0.17	-0.19	-0.20	-0.22	-0.23	-0.24	-0.25	-0.26
20	-0.27	-0.28	-0.28	-0.29	-0.29	-0.30	-0.30	-0.30	-0.30	-0.30
21	-0.29	-0.29	-0.28	-0.28	-0.27	-0.26	-0.25	-0.24	-0.23	-0.22
22	-0.20	-0.19	-0.17	-0.15	-0.14	-0.12	-0.09	-0.07	-0.05	-0.03
23	0.00	0.03	0.05	0.08	0.11	0.14	0.18	0.21	0.24	0.28
24	0.32	0.35	0.39	0.43	0.47	0.52	0.56	0.61	0.65	0.70
25	0.75	0.80	0.85	0.90	0.95	1.00	1.06	1.11	1.17	1.23
26	1.29	1.35	1.41	1.47	1.54	1.60	1.67	1.74	1.80	1.87
27	1.94	2.02	2.09	2.16	2.24	2.31	2.39	2.47	2.55	2.63
28	2.71	2.80	2.88	2.97	3.05	3.14	3.23	3.32	3.41	3.50
29	3.59	3.69	3.78	3.88	3.98	4.08	4.18	4.28	4.38	4.49
30	4.59	4.70	4.80	4.91	5.02	5.13	5.24	5.35	5.47	5.58

RESISTANCE VS. TEMPERATURE CURVES FOR MODEL 1002 SERIAL

