



Certificate of Calibration

1000181009

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Customer Information

Accurate Calibration & Repair
1924 Pinnacle Drive
Aurora, IL 60504

PO #: 344919
Reference #: 1437699Rg
Account #: 00317
SO #: 37699

Instrument Identification

Instrument Id: **R051052**

Location: **R051052**

Noun: Handheld Calibrator

Model: Memocal 2000

Mfr: ERO Electronic

Serial #: 00.18.2202

Accuracy: See manufacturer's specifications

Certification Information

Reason For Service: Calibration with Data

Technician: Appeaelle Bullock

Type Of Calibration: Accredited 17025 with Uncertainties

Cal Date: 31 DEC 14

As Found Condition: In Tolerance

Cal Due: 31 MAR 15

As Left Condition: Left As Found

Temperature: 22.2 °C

Procedure: MFR Manual :

Humidity: 40.0 %

Technician Remarks: Datasheet reflects customer specified calibration points. Unit calibrated per AMS 2750 E.

- 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: Dec 31, 2014

Printed: 1/8/2015 10:30:24

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✓ In Tolerance ✗ Out of Tolerance

Calibration Data

| Range | Nominal | As Found | | As Left | Min | Max | Uncertainty |
|----------------|---------|----------|---|----------|--------|--------|-------------|
| mV Output | | | | | | | |
| -4 mV to 20 mV | -4.000 | -3.9996 | ✓ | As Found | -4.004 | -3.996 | 0.000647 mV |
| | 0.000 | -0.0008 | ✓ | As Found | -0.004 | 0.004 | 0.000621 mV |

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✓ In Tolerance ✗ Out of Tolerance

Calibration Data

| Range | Nominal | As Found | | As Left | Min | Max | Uncertainty |
|----------------------|---------|----------|---|----------|---------|---------|-------------|
| mV Output | | | | | | | |
| | 5.000 | 5.0000 | ✓ | As Found | 4.996 | 5.004 | 0.000653 mV |
| | 10.000 | 9.9999 | ✓ | As Found | 9.996 | 10.004 | 0.000686 mV |
| | 15.000 | 15.0017 | ✓ | As Found | 14.996 | 15.004 | 0.000718 mV |
| | 20.000 | 20.0021 | ✓ | As Found | 19.996 | 20.004 | 0.000751 mV |
| -40 mV to 200 mV | -40.00 | -40.0005 | ✓ | As Found | -40.04 | -39.96 | 0.005381 mV |
| | 0.00 | -0.0048 | ✓ | As Found | -0.04 | 0.04 | 0.005121 mV |
| | 50.00 | 49.9972 | ✓ | As Found | 49.96 | 50.04 | 0.005446 mV |
| | 100.00 | 99.9899 | ✓ | As Found | 99.96 | 100.04 | 0.005771 mV |
| | 150.00 | 149.998 | ✓ | As Found | 149.96 | 150.04 | 0.006096 mV |
| | 200.00 | 199.994 | ✓ | As Found | 199.96 | 200.04 | 0.00641 mV |
| -400 mV to 2000 mV | -400.0 | -399.997 | ✓ | As Found | -400.4 | -399.4 | 0.05231 mV |
| | 0.0 | -0.0145 | ✓ | As Found | -0.4 | 0.4 | 0.050121 mV |
| | 500.0 | 499.982 | ✓ | As Found | 499.6 | 500.4 | 0.05276 mV |
| | 1000.0 | 999.943 | ✓ | As Found | 999.6 | 1000.4 | 0.05501 mV |
| | 1500.0 | 1500.08 | ✓ | As Found | 1499.6 | 1500.4 | 0.05726 mV |
| | 2000.0 | 2000.03 | ✓ | As Found | 1999.6 | 2000.4 | 0.0641 mV |
| -4000 mV to 20000 mV | -4000 | -4000.03 | ✓ | As Found | -4005 | -3995 | 0.5231 mV |
| | 0 | -0.2764 | ✓ | As Found | -5 | 5 | 0.500121 mV |
| | 5000 | 4998.28 | ✓ | As Found | 4995 | 5005 | 0.5276 mV |
| | 10000 | 10000.17 | ✓ | As Found | 9995 | 10005 | 0.5501 mV |
| | 15000 | 14999.4 | ✓ | As Found | 14995 | 15005 | 0.5726 mV |
| | 20000 | 20000.3 | ✓ | As Found | 19995 | 20005 | 0.691 mV |
| mV Measurement | | | | | | | |
| -20 mV to 20 mV | -20.000 | -19.999 | ✓ | As Found | -20.006 | -19.994 | 0.0012 mV |
| | 0.000 | 0.000 | ✓ | As Found | -0.006 | 0.006 | 0.0005 mV |
| | 5.000 | 5.000 | ✓ | As Found | 4.994 | 5.006 | 0.0011 mV |
| | 10.000 | 9.999 | ✓ | As Found | 9.994 | 10.006 | 0.0011 mV |
| | 15.000 | 15.000 | ✓ | As Found | 14.994 | 15.006 | 0.0011 mV |
| | 20.000 | 20.000 | ✓ | As Found | 19.994 | 20.006 | 0.0012 mV |
| -200 mV to 200 mV | -200.00 | -199.98 | ✓ | As Found | -200.06 | -199.94 | 0.007 mV |
| | 0.00 | 0.00 | ✓ | As Found | -0.06 | 0.06 | 0.005 mV |
| | 50.00 | 50.00 | ✓ | As Found | 49.94 | 50.06 | 0.006 mV |
| | 100.00 | 99.99 | ✓ | As Found | 99.94 | 100.06 | 0.006 mV |
| | 150.00 | 150.00 | ✓ | As Found | 149.94 | 150.06 | 0.007 mV |

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✓ In Tolerance ✗ Out of Tolerance

Calibration Data

| Range | Nominal | As Found | | As Left | Min | Max | Uncertainty |
|-----------------------|---------|----------|---|----------|---------|---------|----------------|
| mV Measurement | | | | | | | |
| | 200.00 | 200.00 | ✓ | As Found | 199.94 | 200.06 | 0.007 mV |
| -2000 mV to 2000 mV | -2000.0 | -1999.8 | ✓ | As Found | -2000.6 | -1999.4 | 0.06 mV |
| | 0.0 | 0.0 | ✓ | As Found | -0.6 | 0.6 | 0.05 mV |
| | 500.0 | 500.0 | ✓ | As Found | 499.4 | 500.6 | 0.05 mV |
| | 1000.0 | 999.8 | ✓ | As Found | 999.4 | 1000.6 | 0.06 mV |
| | 1500.0 | 1500.0 | ✓ | As Found | 1499.4 | 1500.6 | 0.06 mV |
| | 2000.0 | 2000.0 | ✓ | As Found | 1999.4 | 2000.6 | 0.06 mV |
| -20000 mV to 20000 mV | -20000 | -19996 | ✓ | As Found | -20008 | -19992 | 0.6 mV |
| | 0 | 0 | ✓ | As Found | -8 | 8 | 0.5 mV |
| | 5000 | 4999 | ✓ | As Found | 4992 | 5008 | 0.5 mV |
| | 10000 | 9997 | ✓ | As Found | 9992 | 10008 | 0.5 mV |
| | 15000 | 14998 | ✓ | As Found | 14992 | 15008 | 0.6 mV |
| | 20000 | 19998 | ✓ | As Found | 19992 | 20008 | 0.6 mV |
| mA Output | | | | | | | |
| 0 mA to 21 mA | 0.000 | 0.00032 | ✓ | As Found | -0.003 | 0.003 | 0.000500405 mA |
| | 1.000 | 1.000007 | ✓ | As Found | 0.997 | 1.003 | 0.00052005 mA |
| | 5.000 | 5.00016 | ✓ | As Found | 4.997 | 5.003 | 0.0006305 mA |
| | 10.000 | 10.00047 | ✓ | As Found | 9.997 | 10.003 | 0.0007205 mA |
| | 15.000 | 15.0018 | ✓ | As Found | 14.997 | 15.003 | 0.0008105 mA |
| | 21.000 | 21.0022 | ✓ | As Found | 20.997 | 21.003 | 0.0009185 mA |
| mA Measurement | | | | | | | |
| -20 mA to 20 mA | -20.000 | -19.994 | ✓ | As Found | -20.006 | -19.994 | 0.0014 mA |
| | 0.000 | 0.000 | ✓ | As Found | -0.006 | 0.006 | 0.0005 mA |
| | 5.000 | 5.000 | ✓ | As Found | 4.994 | 5.006 | 0.0008 mA |
| | 10.000 | 9.998 | ✓ | As Found | 9.994 | 10.006 | 0.0010 mA |
| | 15.000 | 14.999 | ✓ | As Found | 14.994 | 15.006 | 0.0012 mA |
| | 20.000 | 19.999 | ✓ | As Found | 19.994 | 20.006 | 0.0014 mA |
| -130 mA to 130 mA | -130.00 | -130.01 | ✓ | As Found | -130.05 | -129.95 | 0.012 mA |
| | 0.00 | 0.00 | ✓ | As Found | -0.05 | 0.05 | 0.005 mA |
| | 10.00 | 10.00 | ✓ | As Found | 9.95 | 10.05 | 0.005 mA |
| | 50.00 | 50.01 | ✓ | As Found | 49.95 | 50.05 | 0.008 mA |
| | 100.00 | 100.00 | ✓ | As Found | 99.95 | 100.05 | 0.011 mA |
| | 130.00 | 130.01 | ✓ | As Found | 129.95 | 130.05 | 0.012 mA |



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✓ In Tolerance ✗ Out of Tolerance

Calibration Data

| Range | Nominal | As Found | | As Left | | Min | Max | Uncertainty |
|--|---------|----------|---|----------|--|--------|--------|-------------|
| RTD Pt. 100 Ohm Measurement (-200° to 850°C) | | | | | | | | |
| 20.68 Ohms | -195.0 | -194.9 | ✓ | As Found | | -195.3 | -194.7 | 0.05 °C |
| 60.26 Ohms | -100.0 | -100.1 | ✓ | As Found | | -100.3 | -99.7 | 0.05 °C |
| 100.00 Ohms | 0.0 | -0.1 | ✓ | As Found | | -0.3 | 0.3 | 0.05 °C |
| 138.51 Ohms | 100.0 | 99.9 | ✓ | As Found | | 99.7 | 100.3 | 0.06 °C |
| 280.98 Ohms | 500.0 | 499.8 | ✓ | As Found | | 499.7 | 500.3 | 0.06 °C |
| 389.02 Ohms | 845.0 | 844.7 | ✓ | As Found | | 844.7 | 845.3 | 0.06 °C |
| Ohms Measurement | | | | | | | | |
| 0 to 800 Ohms | 0.0 | 0.0 | ✓ | As Found | | -0.2 | 0.2 | 0.05 Ohms |
| | 10.0 | 10.0 | ✓ | As Found | | 9.8 | 10.2 | 0.05 Ohms |
| | 100.0 | 100.0 | ✓ | As Found | | 99.8 | 100.2 | 0.05 Ohms |
| | 300.0 | 299.9 | ✓ | As Found | | 299.8 | 300.2 | 0.06 Ohms |
| | 500.0 | 499.8 | ✓ | As Found | | 499.8 | 500.2 | 0.06 Ohms |
| | 790.0 | 789.8 | ✓ | As Found | | 789.8 | 790.2 | 0.06 Ohms |
| Thermocouple Measurement | | | | | | | | |
| Type E -328° to 1832°F | -328.0 | -328.0 | ✓ | As Found | | -328.4 | -327.6 | 0.09 °F |
| | -200.0 | -200.0 | ✓ | As Found | | -200.4 | -199.6 | 0.11 °F |
| | 0.0 | 0.0 | ✓ | As Found | | -0.4 | 0.4 | 0.11 °F |
| | 32.0 | 32.0 | ✓ | As Found | | 31.6 | 32.4 | 0.11 °F |
| | 200.0 | 199.9 | ✓ | As Found | | 199.6 | 200.4 | 0.11 °F |
| | 400.0 | 399.9 | ✓ | As Found | | 399.6 | 400.4 | 0.11 °F |
| | 600.0 | 599.8 | ✓ | As Found | | 599.6 | 600.4 | 0.11 °F |
| | 800.0 | 799.9 | ✓ | As Found | | 799.6 | 800.4 | 0.11 °F |
| | 1000.0 | 999.9 | ✓ | As Found | | 999.6 | 1000.4 | 0.11 °F |
| | 1200.0 | 1199.8 | ✓ | As Found | | 1199.6 | 1200.4 | 0.11 °F |
| | 1400.0 | 1399.8 | ✓ | As Found | | 1399.6 | 1400.4 | 0.11 °F |
| | 1600.0 | 1599.8 | ✓ | As Found | | 1599.6 | 1600.4 | 0.11 °F |
| | 1832.0 | 1832.0 | ✓ | As Found | | 1831.6 | 1832.4 | 0.11 °F |
| Type J -328° to 2192°F | -328.0 | -328.0 | ✓ | As Found | | -328.5 | -327.5 | 0.11 °F |
| | -200.0 | -200.0 | ✓ | As Found | | -200.5 | -199.5 | 0.11 °F |
| | 0.0 | 0.0 | ✓ | As Found | | -0.5 | 0.5 | 0.11 °F |
| | 32.0 | 32.0 | ✓ | As Found | | 31.5 | 32.5 | 0.11 °F |
| | 200.0 | 199.8 | ✓ | As Found | | 199.5 | 200.5 | 0.11 °F |
| | 400.0 | 399.7 | ✓ | As Found | | 399.5 | 400.5 | 0.11 °F |
| | 600.0 | 599.9 | ✓ | As Found | | 599.5 | 600.5 | 0.11 °F |



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✓ In Tolerance ✗ Out of Tolerance

Calibration Data

| Range | Nominal | As Found | | As Left | Min | Max | Uncertainty |
|--------------------------|---------|----------|---|----------|--------|--------|-------------|
| Thermocouple Measurement | | | | | | | |
| | 800.0 | 799.7 | ✓ | As Found | 799.5 | 800.5 | 0.11 °F |
| | 1000.0 | 999.9 | ✓ | As Found | 999.5 | 1000.5 | 0.11 °F |
| | 1200.0 | 1199.8 | ✓ | As Found | 1199.5 | 1200.5 | 0.11 °F |
| | 1600.0 | 1599.8 | ✓ | As Found | 1599.5 | 1600.5 | 0.08 °F |
| | 1800.0 | 1799.8 | ✓ | As Found | 1799.5 | 1800.5 | 0.08 °F |
| | 2192.0 | 2191.8 | ✓ | As Found | 2191.5 | 2192.5 | 0.09 °F |
| Type K -328° to 2498°F | -328.0 | -327.8 | ✓ | As Found | -328.5 | -327.5 | 0.12 °F |
| | -200.0 | -200.0 | ✓ | As Found | -200.5 | -199.5 | 0.11 °F |
| | 0.0 | 0.0 | ✓ | As Found | -0.5 | 0.5 | 0.11 °F |
| | 32.0 | 32.0 | ✓ | As Found | 31.5 | 32.5 | 0.11 °F |
| | 200.0 | 199.9 | ✓ | As Found | 199.6 | 200.4 | 0.11 °F |
| | 400.0 | 399.7 | ✓ | As Found | 399.6 | 400.4 | 0.11 °F |
| | 600.0 | 599.9 | ✓ | As Found | 599.6 | 600.4 | 0.11 °F |
| | 800.0 | 799.9 | ✓ | As Found | 799.6 | 800.4 | 0.11 °F |
| | 1000.0 | 999.7 | ✓ | As Found | 999.6 | 1000.4 | 0.11 °F |
| | 1200.0 | 1199.8 | ✓ | As Found | 1199.6 | 1200.4 | 0.11 °F |
| | 1400.0 | 1399.8 | ✓ | As Found | 1399.6 | 1400.4 | 0.11 °F |
| | 1600.0 | 1599.8 | ✓ | As Found | 1599.6 | 1600.4 | 0.11 °F |
| | 1800.0 | 1800.0 | ✓ | As Found | 1799.3 | 1800.7 | 0.11 °F |
| | 2000.0 | 1999.7 | ✓ | As Found | 1999.3 | 2000.7 | 0.11 °F |
| | 2200.0 | 2199.6 | ✓ | As Found | 2199.3 | 2200.7 | 0.12 °F |
| | 2498.0 | 2497.6 | ✓ | As Found | 2497.1 | 2498.9 | 0.11 °F |
| Type T -328° to 752°F | -328.0 | -328.0 | ✓ | As Found | -328.5 | -327.5 | 0.11 °F |
| | -200.0 | -200.0 | ✓ | As Found | -200.5 | -199.5 | 0.11 °F |
| | 0.0 | 0.0 | ✓ | As Found | -0.5 | 0.5 | 0.11 °F |
| | 32.0 | 32.0 | ✓ | As Found | 31.5 | 32.5 | 0.11 °F |
| | 200.0 | 199.9 | ✓ | As Found | 199.7 | 200.3 | 0.11 °F |
| | 400.0 | 400.1 | ✓ | As Found | 399.7 | 400.3 | 0.11 °F |
| | 600.0 | 599.9 | ✓ | As Found | 599.7 | 600.3 | 0.11 °F |
| | 752.0 | 752.0 | ✓ | As Found | 751.7 | 752.3 | 0.07 °F |
| Type R -58° to 3214°F | -50.0 | -50.4 | ✓ | As Found | -52.6 | -47.4 | 0.30 °F |
| | 0.0 | -0.8 | ✓ | As Found | -2.6 | 2.6 | 0.20 °F |
| | 32.0 | 31.3 | ✓ | As Found | 29.4 | 34.6 | 0.20 °F |
| | 200.0 | 199.4 | ✓ | As Found | 198.4 | 201.6 | 0.17 °F |
| | 400.0 | 399.4 | ✓ | As Found | 398.8 | 401.2 | 0.15 °F |



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Calibration Data

| Range | Nominal | As Found | | As Left | Min | Max | Uncertainty |
|--------------------------|---------|----------|---|----------|--------|--------|-------------|
| Thermocouple Measurement | | | | | | | |
| | 600.0 | 599.5 | ✓ | As Found | 599.2 | 600.8 | 0.15 °F |
| | 800.0 | 799.5 | ✓ | As Found | 799.2 | 800.8 | 0.14 °F |
| | 1000.0 | 999.6 | ✓ | As Found | 999.2 | 1000.8 | 0.14 °F |
| | 1200.0 | 1199.5 | ✓ | As Found | 1199.2 | 1200.8 | 0.13 °F |
| | 1400.0 | 1399.6 | ✓ | As Found | 1399.2 | 1400.8 | 0.13 °F |
| | 1600.0 | 1599.5 | ✓ | As Found | 1599.2 | 1600.8 | 0.13 °F |
| | 1800.0 | 1799.6 | ✓ | As Found | 1799.2 | 1800.8 | 0.13 °F |
| | 2000.0 | 1999.5 | ✓ | As Found | 1999.2 | 2000.8 | 0.14 °F |
| | 2200.0 | 2199.5 | ✓ | As Found | 2199.2 | 2200.8 | 0.13 °F |
| | 2800.0 | 2799.6 | ✓ | As Found | 2799.2 | 2800.8 | 0.13 °F |
| | 3200.0 | 3199.2 | ✓ | As Found | 3198.8 | 3201.2 | 0.15 °F |
| Type S -58° to 3214°F | -50.0 | -50.6 | ✓ | As Found | -52.0 | -48.0 | 0.22 °F |
| | 0.0 | -0.4 | ✓ | As Found | -2.0 | 2.0 | 0.20 °F |
| | 32.0 | 31.3 | ✓ | As Found | 30.0 | 34.0 | 0.20 °F |
| | 200.0 | 199.4 | ✓ | As Found | 198.8 | 201.2 | 0.17 °F |
| | 400.0 | 399.7 | ✓ | As Found | 398.8 | 401.2 | 0.15 °F |
| | 600.0 | 599.6 | ✓ | As Found | 599.2 | 600.8 | 0.15 °F |
| | 800.0 | 799.6 | ✓ | As Found | 799.2 | 800.8 | 0.15 °F |
| | 1000.0 | 999.6 | ✓ | As Found | 999.2 | 1000.8 | 0.15 °F |
| | 1200.0 | 1199.7 | ✓ | As Found | 1199.2 | 1200.8 | 0.14 °F |
| | 1400.0 | 1399.6 | ✓ | As Found | 1399.2 | 1400.8 | 0.14 °F |
| | 1600.0 | 1599.7 | ✓ | As Found | 1599.2 | 1600.8 | 0.14 °F |
| | 1800.0 | 1799.5 | ✓ | As Found | 1799.2 | 1800.8 | 0.13 °F |
| | 2000.0 | 1999.5 | ✓ | As Found | 1999.2 | 2000.8 | 0.14 °F |
| | 2200.0 | 2199.6 | ✓ | As Found | 2199.2 | 2200.8 | 0.14 °F |
| | 2800.0 | 2799.6 | ✓ | As Found | 2799.2 | 2800.8 | 0.14 °F |
| | 3200.0 | 3199.5 | ✓ | As Found | 3199.2 | 3200.8 | 0.16 °F |
| Type N 32° to 2570°F | 32.0 | 32.0 | ✓ | As Found | 31.6 | 32.4 | 0.11 °F |
| | 200.0 | 199.8 | ✓ | As Found | 199.6 | 200.4 | 0.11 °F |
| | 400.0 | 399.7 | ✓ | As Found | 399.6 | 400.4 | 0.11 °F |
| | 600.0 | 599.7 | ✓ | As Found | 599.6 | 600.4 | 0.11 °F |
| | 800.0 | 799.7 | ✓ | As Found | 799.6 | 800.4 | 0.11 °F |
| | 1000.0 | 999.8 | ✓ | As Found | 999.6 | 1000.4 | 0.11 °F |
| | 1200.0 | 1199.7 | ✓ | As Found | 1199.3 | 1200.7 | 0.11 °F |
| | 1400.0 | 1399.8 | ✓ | As Found | 1399.3 | 1400.7 | 0.11 °F |

✓ In Tolerance ✗ Out of Tolerance

Calibration Data

| Range | Nominal | As Found | | As Left | | Min | Max | Uncertainty |
|---------------------------------|---------|----------|---|----------|--|--------|--------|-------------|
| Thermocouple Measurement | | | | | | | | |
| | 1600.0 | 1599.8 | ✓ | As Found | | 1599.3 | 1600.7 | 0.11 °F |
| | 1800.0 | 1800.0 | ✓ | As Found | | 1799.3 | 1800.7 | 0.11 °F |
| | 2000.0 | 1999.9 | ✓ | As Found | | 1999.3 | 2000.7 | 0.11 °F |
| | 2200.0 | 2199.8 | ✓ | As Found | | 2199.2 | 2200.8 | 0.12 °F |
| | 2370.0 | 2369.6 | ✓ | As Found | | 2369.2 | 2370.8 | 0.10 °F |
| Type B 122° to 3276°F | 150.0 | 147.7 | ✓ | As Found | | 126.3 | 173.7 | 0.56 °F |
| | 200.0 | 197.2 | ✓ | As Found | | 176.3 | 223.7 | 0.51 °F |
| | 400.0 | 398.3 | ✓ | As Found | | 396.2 | 403.8 | 0.51 °F |
| | 600.0 | 599.2 | ✓ | As Found | | 596.2 | 603.8 | 0.27 °F |
| | 800.0 | 799.1 | ✓ | As Found | | 798.0 | 802.0 | 0.20 °F |
| | 1000.0 | 999.3 | ✓ | As Found | | 998.0 | 1002.0 | 0.20 °F |
| | 1200.0 | 1199.3 | ✓ | As Found | | 1198.0 | 1202.0 | 0.20 °F |
| | 1400.0 | 1399.3 | ✓ | As Found | | 1398.7 | 1401.3 | 0.15 °F |
| | 1600.0 | 1599.3 | ✓ | As Found | | 1598.7 | 1601.3 | 0.15 °F |
| | 1800.0 | 1799.4 | ✓ | As Found | | 1799.2 | 1800.8 | 0.15 °F |
| | 2000.0 | 1999.5 | ✓ | As Found | | 1999.2 | 2000.8 | 0.15 °F |
| | 2200.0 | 2199.5 | ✓ | As Found | | 2199.2 | 2200.8 | 0.15 °F |
| | 2600.0 | 2599.4 | ✓ | As Found | | 2599.2 | 2600.8 | 0.15 °F |
| | 3000.0 | 2999.5 | ✓ | As Found | | 2999.2 | 3000.8 | 0.14 °F |
| | 3276.0 | 3275.5 | ✓ | As Found | | 3275.2 | 3276.8 | 0.16 °F |
| Thermocouple Output | | | | | | | | |
| Type E -328° to 1832°F | -328.0 | -328.17 | ✓ | As Found | | -328.4 | -327.6 | 0.06 °F |
| | -200.0 | -199.98 | ✓ | As Found | | -200.4 | -199.6 | 0.11 °F |
| | 32.0 | 31.93 | ✓ | As Found | | 31.6 | 32.4 | 0.05 °F |
| | 600.0 | 600.08 | ✓ | As Found | | 599.6 | 600.4 | 0.06 °F |
| | 1000.0 | 1000.04 | ✓ | As Found | | 999.6 | 1000.4 | 0.11 °F |
| | 1829.0 | 1831.96 | ✓ | As Found | | 1831.6 | 1832.4 | 0.11 °F |
| Type J -328° to 2192°F | -328.0 | -328.07 | ✓ | As Found | | -328.5 | -327.5 | 0.06 °F |
| | -200.0 | -200.19 | ✓ | As Found | | -200.5 | -199.5 | 0.11 °F |
| | 32.0 | 31.84 | ✓ | As Found | | 31.5 | 32.5 | 0.05 °F |
| | 800.0 | 800.13 | ✓ | As Found | | 799.5 | 800.5 | 0.11 °F |
| | 1600.0 | 1600.07 | ✓ | As Found | | 1599.5 | 1600.5 | 0.06 °F |
| | 2192.0 | 2192.13 | ✓ | As Found | | 2191.5 | 2192.5 | 0.07 °F |
| Type K -328° to 2498°F | -328.0 | -327.98 | ✓ | As Found | | -328.5 | -327.5 | 0.07 °F |



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✓ In Tolerance ✗ Out of Tolerance

Calibration Data

| Range | Nominal | As Found | | As Left | Min | Max | Uncertainty |
|-----------------------|---------|----------|---|----------|--------|--------|-------------|
| Thermocouple Output | | | | | | | |
| | -200.0 | -200.07 | ✓ | As Found | -200.5 | -199.5 | 0.11 °F |
| | 32.0 | 31.89 | ✓ | As Found | 31.5 | 32.5 | 0.06 °F |
| | 600.0 | 600.10 | ✓ | As Found | 599.6 | 600.4 | 0.06 °F |
| | 1600.0 | 1599.93 | ✓ | As Found | 1599.6 | 1600.4 | 0.07 °F |
| | 2498.0 | 2498.09 | ✓ | As Found | 2497.1 | 2498.9 | 0.08 °F |
| Type T -328° to 752°F | -328.0 | -327.93 | ✓ | As Found | -328.5 | -327.5 | 0.07 °F |
| | -200.0 | -199.91 | ✓ | As Found | -200.5 | -199.5 | 0.06 °F |
| | 32.0 | 31.89 | ✓ | As Found | 31.5 | 32.5 | 0.06 °F |
| | 200.0 | 199.83 | ✓ | As Found | 199.7 | 200.3 | 0.06 °F |
| | 400.0 | 399.91 | ✓ | As Found | 399.7 | 400.3 | 0.06 °F |
| | 752.0 | 751.87 | ✓ | As Found | 751.7 | 752.3 | 0.06 °F |
| Type R -58° to 3214°F | -50.0 | -51.3 | ✓ | As Found | -52.6 | -47.4 | 0.11 °F |
| | 32.0 | 31.25 | ✓ | As Found | 29.4 | 34.6 | 0.09 °F |
| | 600.0 | 599.79 | ✓ | As Found | 599.2 | 600.8 | 0.08 °F |
| | 1600.0 | 1599.89 | ✓ | As Found | 1599.2 | 1600.8 | 0.08 °F |
| | 2200.0 | 2199.98 | ✓ | As Found | 2199.2 | 2200.8 | 0.08 °F |
| | 3200.0 | 3200.02 | ✓ | As Found | 3198.8 | 3201.2 | 0.09 °F |
| Type S -58° to 3214°F | -50.0 | -51.4 | ✓ | As Found | -52.0 | -48.0 | 0.09 °F |
| | 32.0 | 31.12 | ✓ | As Found | 30.0 | 34.0 | 0.09 °F |
| | 600.0 | 599.74 | ✓ | As Found | 599.2 | 600.8 | 0.08 °F |
| | 1600.0 | 1599.85 | ✓ | As Found | 1599.2 | 1600.8 | 0.08 °F |
| | 2200.0 | 2200.08 | ✓ | As Found | 2199.2 | 2200.8 | 0.08 °F |
| | 3200.0 | 3200.02 | ✓ | As Found | 3199.2 | 3200.8 | 0.09 °F |
| Type N 32° to 2570°F | 32.0 | 31.86 | ✓ | As Found | 31.6 | 32.4 | 0.06 °F |
| | 600.0 | 600.12 | ✓ | As Found | 599.6 | 600.4 | 0.06 °F |
| | 1400.0 | 1399.82 | ✓ | As Found | 1399.3 | 1400.7 | 0.06 °F |
| | 1600.0 | 1599.98 | ✓ | As Found | 1599.3 | 1600.7 | 0.07 °F |
| | 2000.0 | 1999.81 | ✓ | As Found | 1999.3 | 2000.7 | 0.07 °F |
| | 2370.0 | 2370.16 | ✓ | As Found | 2369.2 | 2370.8 | 0.07 °F |
| Type B 122° to 3276°F | 150.0 | 142.4 | ✓ | As Found | 126.3 | 173.7 | 0.18 °F |
| | 1200.0 | 1199.31 | ✓ | As Found | 1198.0 | 1202.0 | 0.10 °F |
| | 1600.0 | 1599.57 | ✓ | As Found | 1598.7 | 1601.3 | 0.08 °F |
| | 2000.0 | 1999.94 | ✓ | As Found | 1999.2 | 2000.8 | 0.08 °F |
| | 2600.0 | 2599.92 | ✓ | As Found | 2599.2 | 2600.8 | 0.08 °F |



Certificate of Calibration

1000181009

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✓ In Tolerance ✗ Out of Tolerance

Calibration Data

| Range | Nominal | As Found | As Left | Min | Max | Uncertainty | |
|---------------------|---------|----------|---------|----------|--------|-------------|---------|
| Thermocouple Output | | | | | | | |
| | 3276.0 | 3275.91 | ✓ | As Found | 3275.2 | 3276.8 | 0.09 °F |

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> |
|-------------------------|-----------------------|--|--------------|-------------------------|-----------------|
| 1000176110 | 00266 | High Impedance Voltmeter-Null Detector | 845AR | 21 APR 2014 | 30 APR 2015 |
| 1000176153 | 02012 | Calibrator | 5520A/SC600 | 29 MAY 2014 | 31 MAY 2015 |
| 1000176725 | 02037 | Humidity/Temperature Chart Recorder | RH520 | 22 MAY 2014 | 31 MAY 2015 |
| 1000178178 | 01241 | Precision Process Calibrator | 7526A | 24 JUL 2014 | 31 JUL 2015 |
| 1000179573 | 00848 | Multimeter, Digital | 34401A | 09 OCT 2014 | 30 APR 2015 |