

## REPORT OF CALIBRATION

This instrument is calibrated and tested to verify compliance with Martel's test specifications for all ranges and parameters required to meet 1 year performance specifications. The calibration uses measurement standards traceable to the National Institute of Standards and Technology (NIST). This calibration complies with the requirements of ANSI/NC SL Z540-1-1994 part 2. Calibration and verification are performed at an ambient temperature of  $23 \pm 5^{\circ}\text{C}$  and relative humidity of  $> 20\%$  to  $< 70\%$ .

Any test uncertainty (TUR) less than 4:1 appears under the TUR heading on the data record. Where the TUR meets or exceeds 4:1, the TUR field is blank.

***Tom Fatur***

Tom Fatur  
President

***Nancy Fligg***

Calibrated By  
Nancy Fligg

**Manufacturer:** Martel Corporation  
**Model:** DMC-1410  
**Serial Number:** 2457239



**Cal Date:** June 27, 2013  
**Report Date:** June 27, 2013  
**Temperature:** 22.7°C  
**Relative Humidity:** 52 %

**Calibration Procedure:** Martel DMC1410: (1 year) CAL/FINAL RS-232/5520,3458 SF  
**Procedure Revision:** 1.0

### Standards Used

Asset	Manufacturer	Model Number	Description	Cal. Date	Due Date
2823A22903	Hewlett Packard	3458A	Multimeter	7-Sep-12	6-Sep-13
7640030	Fluke Corporation	5520A	Calibrator	3-Apr-13	3-Apr-14

### Test Data

PARAMETER	RESULT	ACCEPTANCE LIMITS		TUR
		LOW	HIGH	
<b>RTD/OHM SOURCE VERIFICATION</b>				
15.000 Ohm	15.005	14.968	15.032	PASS
350.000 Ohm	350.002	349.918	350.082	PASS
500.000 Ohm	500.038	499.625	500.375	PASS
1000.00 Ohm	999.99	999.55	1000.45	PASS
3200.00 Ohm	3199.98	3199.22	3200.78	PASS
<b>VOLTAGE READ VERIFICATION</b>				
0.000V	0.000	-0.002	0.002	PASS
10.000V	10.000	9.997	10.003	PASS
20.000V	20.000	19.996	20.004	PASS
<b>(KHz) FREQUENCY READ VERIFICATION</b>				
9.00KHz	9.00	8.98	9.02	PASS
<b>ISOLATED V VERIFICATION</b>				
0.000V	0.000	-0.002	0.002	PASS
15.000V	15.000	14.996	15.004	PASS
30.000V	30.000	29.995	30.005	PASS
<b>VOLTAGE SOURCE VERIFICATION</b>				
0.0000V	0.0001	-0.0020	0.0020	PASS
10.0000V	10.0000	9.9970	10.0030	PASS
20.0000V	20.0002	19.9960	20.0040	PASS
<b>LOOP POWER VERIFICATION</b>				
27.5000V	25.8764	25.0000	30.0000	PASS



PARAMETER	RESULT	ACCEPTANCE LIMITS		TUR	
		LOW	HIGH		
<b>mA READ VERIFICATION</b>					
4.000mA	4.000	3.998	4.002	PASS	
12.000mA	12.000	11.997	12.003	PASS	
24.000mA	24.000	23.996	24.004	PASS	
<b>ISOLATED mA VERIFICATION</b>					
4.000mA	4.000	3.998	4.002	PASS	
12.000mA	12.000	11.997	12.003	PASS	
24.000mA	24.000	23.996	24.004	PASS	
<b>mA SOURCE VERIFICATION</b>					
4.000mA	4.000	3.998	4.002	PASS	
12.000mA	12.000	11.997	12.003	PASS	
24.000mA	24.000	23.996	24.004	PASS	
<b>RTD/OHM 4W READ VERIFICATION</b>					
15.00 Ohm	15.00	14.97	15.03	PASS	
350.00 Ohm	350.00	349.92	350.08	PASS	
500.0 Ohm	500.0	499.6	500.4	PASS	
1000.0 Ohm	1000.0	999.5	1000.5	PASS	
3200.0 Ohm	3200.0	3199.2	3200.8	PASS	
<b>RTD/OHM 3W READ VERIFICATION</b>					
350.00 Ohm	350.01	349.88	350.12	PASS	
<b>(KHz) FREQUENCY SOURCE VERIFICATION</b>					
10000Hz @ 5V	10000	9975	10025	PASS	
<b>THERMOCOUPLE READ VERIFICATION - mV</b>					
-10.000mV	-10.000	-10.012	-9.988	PASS	
35.000mV	35.000	34.985	35.015	PASS	
75.000mV	75.000	74.979	75.021	PASS	
<b>THERMOCOUPLE SOURCE VERIFICATION - mV</b>					
-10.000mV	-10.000	-10.012	-9.988	PASS	
35.000mV	35.000	34.985	35.015	PASS	
75.000mV	74.999	74.979	75.021	PASS	
<b>THERMOCOUPLE READ VERIFICATION - J TYPE</b>					
-180.0degC	-180.0	-180.6	-179.4	PASS	2.2
0.0degC	0.0	-0.4	0.4	PASS	2.9
1200.0degC	1200.0	1199.6	1200.4	PASS	1.7
<b>THERMOCOUPLE SOURCE VERIFICATION - J TYPE</b>					
-180.00degC	-179.89	-180.60	-179.40	PASS	2.2
0.00degC	0.03	-0.40	0.40	PASS	2.9
1200.00degC	1200.00	1199.60	1200.40	PASS	1.7

**End of Test Data**