



## 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: MC-1010  
Serial Number: 2622108



Cal Date: December 10, 2013  
Report Date: December 20, 2013  
Temperature: 21.1°C  
Relative Humidity: 38 %

Calibration Procedure: Martel MC1010: (1 year) CAL/FINAL RS-232/5520,3458 SF  
Procedure Revision: 1.0

### Standards Used

Asset	Manufacturer	Model Number	Description	Cal. Date	Due Date
2823A15661	Hewlett Packard	3458A	Multimeter	6-Sep-13	5-Sep-14
7640030	Fluke Corporation	5520A	Calibrator	3-Apr-13	3-Apr-14

### Test Data

PARAMETER	RESULT	ACCEPTANCE LIMITS		TUR
		LOW	HIGH	
RTD/OHM SOURCE VERIFICATION				
15.000 Ohm	15.003	14.946	15.054	PASS
350.000 Ohm	350.001	349.862	350.138	PASS
500.000 Ohm	500.041	499.375	500.625	PASS
1000.00 Ohm	999.98	999.25	1000.75	PASS
3200.00 Ohm	3200.00	3198.70	3201.30	PASS
VOLTAGE READ VERIFICATION				
0.000V	0.000	-0.002	0.002	PASS
10.000V	10.000	9.996	10.004	PASS
20.000V	20.000	19.995	20.005	PASS
(KHz) FREQUENCY READ VERIFICATION				
9.00KHz	9.00	8.98	9.02	PASS
VOLTAGE SOURCE VERIFICATION				
0.0000V	0.0001	-0.0020	0.0020	PASS
10.0000V	10.0000	9.9965	10.0035	PASS
20.0000V	20.0002	19.9950	20.0050	PASS
(KHz) FREQUENCY SOURCE VERIFICATION				
10000Hz @ 5V	10000	9975	10025	PASS
mA READ VERIFICATION				
4.000mA	4.000	3.997	4.003	PASS
12.000mA	12.000	11.996	12.004	PASS
24.000mA	24.000	23.994	24.006	PASS

MET/CAL RunTime Report: Calibration Results

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PARAMETER	RESULT	ACCEPTANCE LIMITS			TUR
		LOW	HIGH		
mA SOURCE VERIFICATION					
4.000mA	4.000	3.997	4.003	PASS	
12.000mA	11.999	11.996	12.004	PASS	
24.000mA	24.000	23.994	24.006	PASS	
RTD/OHM 4W READ VERIFICATION					
15.00 Ohm	15.01	14.95	15.05	PASS	
350.00 Ohm	350.01	349.86	350.14	PASS	
500.0 Ohm	500.0	499.4	500.6	PASS	
1000.0 Ohm	1000.0	999.2	1000.8	PASS	
3200.0 Ohm	3200.0	3198.7	3201.3	PASS	
RTD/OHM 3W READ VERIFICATION					
350.00 Ohm	350.01	349.81	350.19	PASS	
THERMOCOUPLE READ VERIFICATION - mV					
-10.000mV	-9.999	-10.012	-9.988	PASS	
35.000mV	35.000	34.983	35.017	PASS	
75.000mV	75.000	74.975	75.025	PASS	
THERMOCOUPLE SOURCE VERIFICATION - mV					
-10.000mV	-10.003	-10.012	-9.988	PASS	
35.000mV	34.997	34.983	35.017	PASS	
75.000mV	74.997	74.975	75.025	PASS	
THERMOCOUPLE READ VERIFICATION - J TYPE					
-180.0degC	-179.8	-180.6	-179.4	PASS	2.2
0.0degC	0.1	-0.4	0.4	PASS	2.9
1200.0degC	1200.1	1199.6	1200.4	PASS	1.7
THERMOCOUPLE SOURCE VERIFICATION - J TYPE					
-180.00degC	-180.19	-180.60	-179.40	PASS	2.2
0.00degC	-0.14	-0.40	0.40	PASS	2.9
1200.00degC	1199.87	1199.60	1200.40	PASS	1.7

## End of Test Data