

## 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/NCSL 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:** M3001  
**Serial Number:** 2601300



**Cal Date:** January 6, 2014  
**Report Date:** January 6, 2014  
**Temperature:** 21.0°C  
**Relative Humidity:** 41 %

**Calibration Procedure:** 3001:(1 yr)FIN REV 1.1 RS-232/5520,1281,742,1521 C  
**Procedure Revision:** 1.1

### Standards Used

Asset	Manufacturer	Model Number	Description	Cal. Date	Due Date
43681-1281	Wavetek-Datron	1281	Multimeter	18-Aug-13	18-Aug-14
7675001	Fluke Corporation	5520A	Calibrator	7-Jan-13	7-Jan-14
1982011	Fluke Corporation	742A-10	Resistance Standard	24-Apr-12	24-Apr-14
2029006	Fluke Corporation	742A-100	Resistance Standard	10-May-12	9-May-14
2029005	Fluke Corporation	742A-10K	Resistance Standard	7-May-12	7-May-14
A12693-1521	Hart Scientific	1521	Thermometer	13-Jan-13	13-Jan-15
A121234-5610	Hart Scientific	5610	Thermistor Probe	16-Jan-13	16-Jan-15

### Test Data

PARAMETER	RESULT	ACCEPTANCE LIMITS		TUR
		LOW	HIGH	
<b>Low Ohm Read Verification</b>				
0.000 Ohm	0.000	-0.004	0.004	PASS
25.000 Ohm	25.000	24.995	25.005	PASS
75.000 Ohm	75.001	74.994	75.006	PASS
95.000 Ohm	95.001	94.994	95.006	PASS
105.000 Ohm	105.001	104.994	105.006	PASS
150.000 Ohm	150.000	149.993	150.007	PASS
300.000 Ohm	300.003	299.990	300.010	PASS
400.000 Ohm	400.002	399.988	400.012	PASS
<b>High Ohm Read Verification</b>				
0.00 Ohm	0.00	-0.04	0.04	PASS

PARAMETER	RESULT	ACCEPTANCE LIMITS		TUR
		LOW	HIGH	
250.00 Ohm	249.99	249.95	250.05	PASS
750.00 Ohm	750.02	749.94	750.06	PASS
1500.00 Ohm	1500.02	1499.93	1500.07	PASS
3000.00 Ohm	3000.03	2999.90	3000.10	PASS
4000.00 Ohm	4000.03	3999.88	4000.12	PASS
mV Source Verification				
0.0000mV	0.0002	-0.0030	0.0030	PASS
35.0000mV	35.0000	34.9960	35.0040	PASS
65.0000mV	64.9998	64.9951	65.0049	PASS
100.0000mV	99.9997	99.9940	100.0060	PASS
1V Source Verification				
0.00000V	0.000001	-0.000010	0.000010	PASS
0.350000V	0.349999	0.349980	0.350020	PASS
0.650000V	0.649997	0.649970	0.650030	PASS
1.000000V	0.999997	0.999960	1.000040	PASS
10V Source Verification				
0.00000V	0.00002	-0.00010	0.00010	PASS
3.50000V	3.49999	3.49980	3.50020	PASS
6.50000V	6.49997	6.49970	6.50030	PASS
10.00000V	9.99999	9.99960	10.00040	PASS
100V Source Verification				
0.0000V	0.0001	-0.0010	0.0010	PASS
35.0000V	35.0000	34.9980	35.0020	PASS
65.0000V	64.9997	64.9970	65.0030	PASS
100.0000V	99.9997	99.9960	100.0040	PASS
100mA Source Verification				
0.0000mA	0.0001	-0.0010	0.0010	PASS
35.0000mA	35.0002	34.9972	35.0028	PASS
65.0000mA	65.0006	64.9957	65.0043	PASS
100.0000mA	100.0016	99.9940	100.0060	PASS
Low Ohm Source Verification				
5.000 Ohm	4.999	4.985	5.015	PASS
100.000 Ohm	99.999	99.985	100.015	PASS
200.000 Ohm	200.000	199.985	200.015	PASS
400.000 Ohm	399.999	399.985	400.015	PASS
High Ohm Source Verification				
5.00 Ohm	5.01	4.70	5.30	PASS
1000.00 Ohm	999.99	999.70	1000.30	PASS
2000.00 Ohm	2000.00	1999.70	2000.30	PASS
4000.00 Ohm	4000.00	3999.70	4000.30	PASS
Thermocouple Read Verification - mV				
-10.000mV	-10.000	-10.003	-9.997	PASS
15.000mV	15.000	14.997	15.003	PASS
35.000mV	35.000	34.996	35.004	PASS
55.000mV	55.000	54.995	55.005	PASS
75.000mV	75.000	74.995	75.005	PASS
Thermocouple Source Verification - mV				
-10.000mV	-10.000	-10.003	-9.997	PASS
15.000mV	15.000	14.997	15.003	PASS
35.000mV	35.000	34.996	35.004	PASS
55.000mV	55.000	54.995	55.005	PASS

PARAMETER	RESULT	ACCEPTANCE LIMITS		TUR
		LOW	HIGH	
75.000mV	74.999	74.995	75.005	PASS
ISO 10V Verification				
0.0000V	0.0000	-0.0002	0.0002	PASS
2.5000V	2.5000	2.4997	2.5003	PASS
5.0000V	5.0000	4.9995	5.0005	PASS
7.5000V	7.5001	7.4994	7.5006	PASS
10.0000V	10.0002	9.9993	10.0007	PASS
ISO 100V Verification				
0.000V	0.000	-0.002	0.002	PASS
25.000V	25.000	24.997	25.003	PASS
50.000V	50.000	49.995	50.005	PASS
75.000V	75.001	74.994	75.006	PASS
100.000V	100.002	99.993	100.007	PASS
ISO 52mA Verification				
0.0000mA	0.0001	-0.0010	0.0010	PASS
25.0000mA	24.9998	24.9965	25.0035	PASS
50.0000mA	49.9992	49.9940	50.0060	PASS
Loop Power Verification : PASS				
Thermocouple Read Verification - Type J				
20.91degC	20.94	20.74	21.08	PASS

### End of Test Data

MET/CAL RunTime Report: Calibration Results

Page 3 of 3

Calibration Report Number: 11222701062014 2601300