



# Certificate of Calibration

200008563

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## Customer Information

Midwest Metrology  
341 Smith Drive  
Attn: Bill Sierschula  
Clayton, OH 45315

PO #:

Account #: 000001

SO #: 200003599

## Instrument Identification

Instrument Id: **02-0082**

Noun: Digital Multimeter

Mfr: Fluke

Accuracy: Mfg. Specifications

Model: 8060A

Serial #: 7223019

## Certification Information

Reason For Service: Calibration w/Data

Type Of Calibration: Normal

As Found Condition: In Tolerance

As Left Condition: Left As Found

Procedure: NA17-20AQ-348 : Various, DMM's

Remarks:

QA Remarks:

Technician: Bill Sierschula

Cal Date: 07 MAY 03

Cal Due: 07 MAY 04

Temperature: 23.0 °C

Humidity: 38.0 %

*The instrument(s) listed on this certification have been calibrated against standards traceable to the National Institute of Standards and Technology (NIST), derived from ratio type measurements, or compared to nationally or internationally recognized consensus standards.*

*Midwest Metrology's quality system complies with applicable requirements of ANSI/NCSL Z540-1 and ISO/IEC 17025.*

*Reported uncertainties and/or "test uncertainty ratios" (TUR's) are expressed as expanded uncertainty values at approximately the 95% confidence level using a coverage factor of K=2. A TUR of 4:1 is routinely observed unless otherwise noted on the Certificate. Statements of compliance, where applicable, are based on test results falling within specified limits with no reduction by the uncertainty of the measurement.*

*Calibration due dates appearing on the Certificate of Calibration and label are determined by the client for administrative purposes and do not imply continued conformance to specification.*

*All results contained herein relate only to item(s) calibrated. This certificate shall not be reproduced except in full, without the written permission of Midwest Metrology.*

William Sierschula, Director of Service

## Calibration History

WO#	Reason For Service	Type Of Cal	As Found Condition	As Left Condition	Cal Date	Cal Due
1000505525	Calibration w/Data	Normal	In Tolerance	Left As Found	25 Mar 2001	25 Apr 2002
2001000366	Calibration w/Data	Normal	In Tolerance	Left As Found	02 May 2002	02 May 2003
200008563	Calibration w/Data	Normal	In Tolerance	Left As Found	07 May 2003	07 May 2004

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✓ In Tolerance    ✗ Out of Tolerance

## Calibration Data

Range	Nominal	As Found		As Left		Min	Max
DC Voltage Test							
200 mV	190 mV	190.00	✓	As Found		189.90	190.10
2 V	1.9 V	1.9000	✓	As Found		1.8990	1.9010
20 V	19 V	18.999	✓	As Found		18.988	19.012
	17 V	16.999	✓	As Found		16.989	17.011
	15 V	14.999	✓	As Found		14.990	15.010
	13 V	12.999	✓	As Found		12.991	13.009
	10 V	9.999	✓	As Found		9.993	10.007
	8 V	7.999	✓	As Found		7.994	8.006
	6 V	5.999	✓	As Found		5.995	6.005
	4 V	3.999	✓	As Found		3.996	4.004
	2 V	2.000	✓	As Found		1.997	2.003
200 V	190 V	190.01	✓	As Found		189.88	190.12
1000 V	990 V	990.0	✓	As Found		989.3	990.7
AC Voltage Test							
200 mV	190 mV @ 20 Hz	190.07	✓	As Found		188.00	192.00
	190 mV @ 60 Hz	189.83	✓	As Found		189.52	190.48
	190 mV @ 1 kHz	189.84	✓	As Found		189.42	190.58
	190 mV @ 10 kHz	189.82	✓	As Found		188.60	191.40
	190 mV @ 30 kHz	189.80	✓	As Found		187.10	192.90
	190 mV @ 50 kHz	189.85	✓	As Found		182.30	197.70
	190 mV @ 100 kHz	190.29	✓	As Found		182.30	197.70
2 V	1.9 V @ 20 Hz	1.8980	✓	As Found		1.8800	1.9200
	1.9 V @ 60 Hz	1.8988	✓	As Found		1.8895	1.9105
	1.9 V @ 1 kHz	1.8971	✓	As Found		1.8885	1.9115
	1.9 V @ 10 kHz	1.8951	✓	As Found		1.8770	1.9230
	1.9 V @ 30 kHz	1.8960	✓	As Found		1.8520	1.9480
	1.9 V @ 50 kHz	1.8975	✓	As Found		1.8230	1.9770
	1.9 V @ 100 kHz	1.9055	✓	As Found		1.8230	1.9770
20 V	19 V @ 20 Hz	19.012	✓	As Found		18.800	19.200
	19 V @ 60 Hz	18.996	✓	As Found		18.895	19.105
	19 V @ 1 kHz	19.003	✓	As Found		18.885	19.115
	19 V @ 10 kHz	18.970	✓	As Found		18.770	19.230
	19 V @ 30 kHz	18.972	✓	As Found		15.520	19.480
	19 V @ 50 kHz	18.981	✓	As Found		18.230	19.770

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✓ In Tolerance    ✗ Out of Tolerance

## Calibration Data

Range	Nominal	As Found		As Left		Min	Max
AC Voltage Test							
	19 V @ 100 kHz	19.051	✓	As Found		18.230	19.770
200 V	190 V @ 60 Hz	189.99	✓	As Found		188.95	191.05
	190 V @ 1 kHz	190.72	✓	As Found		188.85	191.15
	190 V @ 10 kHz	191.74	✓	As Found		187.70	192.30
	190 V @ 20 kHz	191.72	✓	As Found		187.70	192.30
750 V	740 V @ 60 Hz	739.5	✓	As Found		731.6	748.4
	740 V @ 900 Hz	742.3	✓	As Found		731.6	748.4
Frequency Test							
200 mV	100 Hz	100.00	✓	As Found		99.94	100.06
	190 kHz	189.98	✓	As Found		189.89	190.11
2 V	19 kHz	18.998	✓	As Found		18.989	19.011
	1900 Hz	1899.8	✓	As Found		1898.9	1901.1
Resistance Test							
200 Ohm	190 Ohm	189.96	✓	As Found		189.83	190.17
2 kOhm	1.9 kOhm	1.8993	✓	As Found		1.8985	1.9015
20 kOhm	19 kOhm	18.994	✓	As Found		18.985	19.015
200 kOhm	190 kOhm	189.96	✓	As Found		189.85	190.15
2 MOhm	1 MOhm	0.9998	✓	As Found		0.9983	1.0017
20 MHom	10 MOhm	10.00	✓	As Found		9.95	10.05
300 MOhm	100 MOhm	100.0	✓	As Found		95.0	105
DC Current Test							
200 µA	190 µA	190.02	✓	As Found		189.60	190.40
2 mA	1.9 mA	1.8999	✓	As Found		1.8960	1.9040
20 mA	19 mA	19.000	✓	As Found		18.941	19.059
200 mA	190 mA	189.87	✓	As Found		189.41	190.59
2000 mA	1900 mA	1898.8	✓	As Found		1894.1	1905.9
AC Current Test							
200 µA	190 µA @ 1 kHz	189.85	✓	As Found		188.47	191.53
2 mA	1.9 mA @ 1 kHz	1.8985	✓	As Found		1.8847	1.9153
20 mA	19 mA @ 1 kHz	18.985	✓	As Found		18.847	19.153
200 mA	190 mA @ 1 kHz	189.74	✓	As Found		188.47	191.53
2000 mA	1900 mA @ 1 kHz	1897.1	✓	As Found		1884.7	1915.3

End of Datasheet



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## Calibration Standards

<u>NIST Traceable #</u>	<u>Instrument ID#</u>	<u>Description</u>	<u>Model</u>	<u>Calibration Date</u>	<u>Date Due</u>
200008232	02-0002	Meter Calibrator	5500-SC	13 MAR 2003	13 MAR 2004
200006691	02-0011	Frequency Counter	5335A, OPT010	01 AUG 2002	01 SEP 2003