Certificate of Calibration

ISO/IEC 17025:2017 and ANSI/NCSL Z540.1-1994

Certificate Number WO-00565662-145

AC-1498.02

Model Number	34465A
Manufacturer	Keysight Technologies Inc
Description	Digital multimeter, 6 1/2 digit, Truevolt DMM
Serial Number	MY57505421
Customer Asset No.	34465A-0002

Customer
Micron Technology Inc
8000 S Federal Way
BOISE ID 83716-9632
United States

Date of Calibration	19 Oct 2023
Procedure	STE-50114595-B.02.10
Temperature	(23 ± 5) °C
Humidity	(50 ± 30) %RH

Location of Calibration
Micron Technology Inc
8000 S Federal Way
BOISE ID 83716-9632
United States

This certifies that the equipment has been calibrated using applicable Keysight Technologies procedures and in compliance with ISO/IEC 17025:2017 and ANSI/NCSL Z540.1-1994 (R2002). The quality management system is registered to ISO 9001:2015.

As Received Conditions
The measured values of the equipment were observed in specification at the points tested. Additionally, the expanded measurement uncertainty intervals about the measured values were in specification.

Action Taken
- The equipment was adjusted to optimize the performance.

As Completed Conditions
The measured values of the equipment were observed in specification at the points tested. Additionally, the expanded measurement uncertainty intervals about the measured values were in specification.

The uncertainty evaluation has been performed in accordance with ISO/IEC Guide 98-3:2008 (GUM). The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k such that the coverage probability corresponds to approximately 95%. This probability corresponds to a coverage factor of k=2 for a normal distribution.

Remarks or Special Requirements

This calibration report shall not be reproduced, except in full. The documented results relate to the equipment calibrated only.

The test limits stated in the report correspond to the published specifications of the equipment, at the points tested.
This calibration report may refer to equipment manufactured by HP, Agilent and Keysight as being manufactured by Keysight Technologies. This calibration report is available at Keysight Support Portal http://support.keysight.com/.

Based on the customer's request, the next calibration is due on 19 Oct 2024.

Keysight Technologies Inc
1900 Garden of the Gods Rd
Bldg A pillar 027E
Colorado Springs CO 80907
UNITED STATES

William Weber

Bill Weber VOSCal Manager

Certificate of Calibration

ISO/IEC 17025:2017 and ANSI/NCSL Z540.1-1994

Certificate Number WO-00565662-145

AC-1498.02

Traceability Information

Technician ID 01005512

Measurements are traceable to the International System of Units (SI) via national metrology institutes (www.keysight.com/find/NMI) that are signatories to the CIPM Mutual Recognition Arrangement.

Calibration Equipment Used

Model Number	Model Description	Equipment ID	Cal Due Date	Certificate Number
33250A	Function/Arbitrary Waveform Generator, 80 MHz	33250A07217	30 Nov 2023	WO-00302125
5725A	Amplifier for 5700A or 5720A	5725A65001	30 Sep 2024	WO-00543497
5730A	High Performance Multifunction Calibrator	5730A47502	31 Oct 2024	WO-00543491

Measurement Report

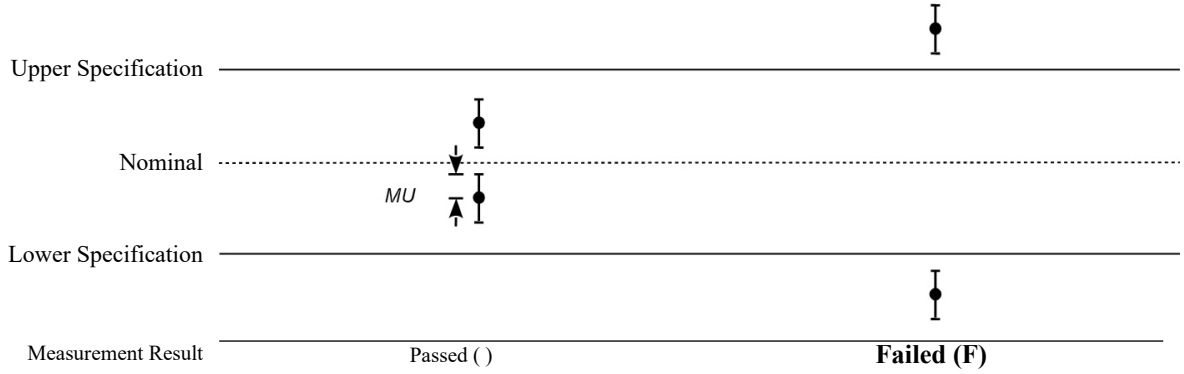
Certificate Number WO-00565662-145

Model Number	34465A
Serial Number	MY57505421
Test Date	19 Oct 2023
Procedure	AGT_3446XA, 5011-4595
Procedure Version	B.02.10
Procedure Executive	STE/9000, C.09.18W
Procedure Subsystem	MENDOR, B.06.34

Note: Traceability information can be found on the calibration certificate.

Measurement results are reported as:

- Passed ( ) - The measured values of the equipment were observed in specification at the points tested.
- Failed (F) - One or more measured values of the equipment were observed out of specification at the points tested.



MU = 95% expanded measurement uncertainty.
( ) This result is indicated on the measurement report as a blank space in the column labeled “Status” or “Sts”.
Note: For more information on the level of risk such as false accept and false reject and statistical assumptions of these statements of conformity, please visit: www.keysight.com/find/decisionrules.

KEYSIGHT TECHNOLOGIES

Measurement Report

Certificate Number WO-00565662-145

Calibration Test Results Summary

Calibration test results of warranted specifications

Test Name	As Received Status	As Completed Status
ZERO OFFSET - FRONT TERMINALS	Passed	Passed
ZERO OFFSET - REAR TERMINALS	Passed	Passed
DC VOLTS	Passed	Passed
AC VOLTS	Passed	Passed
FREQUENCY	Passed	Passed
OHMS	Passed	Passed
DC CURRENT	Passed	Passed
AC CURRENT	Passed	Passed
HIGH CURRENT	Passed	Passed

Functional Test Results Summary

The following functional test results are not part of an accredited delivery, even if they are part of an otherwise accredited calibration report.

The following tests document the functional verification of the instruments' non-warranted performance. Neither a statement of conformance or decision rule is used for a Functional Test, measurement uncertainties are only provided by exception. For a "Functional Test" the test results are reported as "As Expected" when showing expected performance and "Not As Expected" otherwise. "As Expected" results of individual test points are indicated in the measurement report by a blank space in the column labeled "Status" to allow easier recognition of any "Not As Expected" points. If a functional test result is reported as "Not As Expected", repair and/or adjustment is recommended. Test results reported as "Done" are possible if no limits are applied. For qualitative or quantitative "Functional Tests" the test results are not warranted, and no judgment is made. The "actual" measured results are helpful to users for some applications.

Test Name	As Received Status	As Completed Status
AUTO-CALIBRATION	As Expected	As Expected
DC LOW CURRENT FUNC	As Expected	As Expected

Tested Configuration

Firmware Version	A.02.17-02.40-02.17-00.52-03-01

Measurement Report

Certificate Number WO-00565662-145

Model 34465A **Serial** MY57505421 **Firmware Rev** A.02.17-02.40-02.17-00.52-03-01
Options Tested

Test Date 19 Oct 2023
Condition As Received

ZERO OFFSET - FRONT TERMINALS — Passed

The test limits correspond to the published 1 year specifications.
Pre-Repair/Adjustment Data:

TEST CONDITIONS		MINIMUM	MEASURED	MAXIMUM	UNCERT.	Status
Range	*Input*					
DC Volts Zero Offset						
100 mV	0 V	−3.50 µV	0.86 µV	3.50 µV	0.36 µV	
1 V	0 V	−4.00 µV	0.80 µV	4.00 µV	0.60 µV	
10 V	0 V	−40.0 µV	1.1 µV	40.0 µV	5.8 µV	
100 V	0 V	−0.600 mV	0.054 mV	0.600 mV	0.062 mV	
1000 V	0 V	−6.00 mV	0.07 mV	6.00 mV	0.58 mV	
4-Wire Ohms Zero Offset						
100 Ω	0 Ω	−4.00 mΩ	0.36 mΩ	4.00 mΩ	0.19 mΩ	
1 kΩ	0 Ω	−5.00 mΩ	0.26 mΩ	5.00 mΩ	0.60 mΩ	
10 kΩ	0 Ω	−50.0 mΩ	6.9 mΩ	50.0 mΩ	6.1 mΩ	
100 kΩ	0 Ω	−0.500 Ω	0.057 Ω	0.500 Ω	0.061 Ω	
1 MΩ	0 Ω	−5.00 Ω	0.45 Ω	5.00 Ω	0.63 Ω	
10 MΩ	0 Ω	−100.0 Ω	2.3 Ω	100.0 Ω	6.1 Ω	
2-Wire Ohms Zero Offset						
100 MΩ	0 Ω	−1000 Ω	0 Ω	1000 Ω	58 Ω	
DC Current Zero Offset						
1 mA	0 A	−0.05000 µA	0.00320 µA	0.05000 µA	0.0011 µA	
10 mA	0 A	−2.0000 µA	−0.5288 µA	2.0000 µA	0.057 µA	
100 mA	0 A	−5.000 µA	−0.512 µA	5.000 µA	0.064 µA	
1 A	0 A	−0.10000 mA	−0.01148 mA	0.10000 mA	0.0012 mA	
3 A	0 A	−0.6000 mA	−0.0102 mA	0.6000 mA	0.0058 mA	
10 A	0 A	−1.0000 mA	−0.0108 mA	1.0000 mA	0.0059 mA	

ZERO OFFSET - REAR TERMINALS — Passed

The test limits correspond to the published 1 year specifications.
Pre-Repair/Adjustment Data:

TEST CONDITIONS		MINIMUM	MEASURED	MAXIMUM	UNCERT.	Status
Range	*Input*					
DC Volts Zero Offset						
100 mV	0 V	−3.50 µV	0.92 µV	3.50 µV	0.19 µV	
1 V	0 V	−4.00 µV	1.14 µV	4.00 µV	0.58 µV	
10 V	0 V	−40.0 µV	0.7 µV	40.0 µV	5.8 µV	
100 V	0 V	−0.600 mV	0.025 mV	0.600 mV	0.063 mV	
1000 V	0 V	−6.00 mV	0.00 mV	6.00 mV	0.58 mV	

ZERO OFFSET - REAR TERMINALS (cont.)

TEST CONDITIONS	MINIMUM	MEASURED	MAXIMUM	UNCERT.	Status
4-Wire Ohms ZERO Offset					
100 Ω 0 Ω	−4.00 mΩ	1.16 mΩ	4.00 mΩ	0.18 mΩ	
1 kΩ 0 Ω	−5.00 mΩ	1.15 mΩ	5.00 mΩ	0.63 mΩ	
10 kΩ 0 Ω	−50.0 mΩ	10.4 mΩ	50.0 mΩ	6.0 mΩ	
100 kΩ 0 Ω	−0.500 Ω	0.129 Ω	0.500 Ω	0.062 Ω	
1 MΩ 0 Ω	−5.00 Ω	0.17 Ω	5.00 Ω	0.59 Ω	
10 MΩ 0 Ω	−100.0 Ω	2.3 Ω	100.0 Ω	6.2 Ω	
2-Wire Ohms ZERO Offset					
100 MΩ 0 Ω	−1000 Ω	2 Ω	1000 Ω	58 Ω	
DC Current Zero Offset					
1 mA 0 A	−0.05000 µA	0.00249 µA	0.05000 µA	0.00074 µA	
10 mA 0 A	−2.0000 µA	−0.4291 µA	2.0000 µA	0.042 µA	
100 mA 0 A	−5.000 µA	−0.439 µA	5.000 µA	0.081 µA	
1 A 0 A	−0.10000 mA	−0.00816 mA	0.10000 mA	0.00080 mA	
3 A 0 A	−0.6000 mA	−0.0080 mA	0.6000 mA	0.0058 mA	

DC VOLTS

Passed

The test limits correspond to the published 1 year specifications.
Pre-Repair/Adjustment Data:

TEST CONDITIONS		MINIMUM	MEASURED	MAXIMUM	UNCERT.	Status
Range	*Input (Front)*					
100 mV	100 mV	99.9915 mV	99.9984 mV	100.0085 mV	0.0017 mV	
100 mV	-100 mV	−100.0085 mV	−99.9999 mV	−99.9915 mV	0.0017 mV	
1 V	1 V	0.9999610 V	0.9999961 V	1.0000390 V	0.0000064 V	
1 V	-1 V	−1.0000390 V	−0.9999977 V	−0.9999610 V	0.0000065 V	
10 V	4 V	3.999840 V	3.999988 V	4.000160 V	0.000019 V	
10 V	10 V	9.999660 V	9.999968 V	10.000340 V	0.000041 V	
10 V	-10 V	−10.000340 V	−9.999970 V	−9.999660 V	0.000041 V	
100 V	100 V	99.99540 V	99.99866 V	100.00460 V	0.00059 V	
100 V	-100 V	−100.00460 V	−99.99843 V	−99.99540 V	0.00060 V	
1000 V	1000 V	999.9440 V	999.9873 V	1000.0560 V	0.0080 V	
1000 V	-500 V	−500.0260 V	−499.9932 V	−499.9740 V	0.0039 V	

Measurement Report

Certificate Number WO-00565662-145

Model 34465A **Serial** MY57505421 **Firmware Rev** A.02.17-02.40-02.17-00.52-03-01
Options Tested

Test Date 19 Oct 2023
Condition As Received

AC VOLTS

Passed

The test limits correspond to the published 1 year specifications.
Pre-Repair/Adjustment Data:

TEST CONDITIONS	MINIMUM	MEASURED	MAXIMUM	UNCERT.	Status
Input Freq. (Front)					
------- -------					
100 mV Range					
100 mV 1 kHz	99.930 mV	99.977 mV	100.070 mV	0.017 mV	
100 mV 50 kHz	99.900 mV	99.991 mV	100.100 mV	0.030 mV	
100 mV 300 kHz	98.90 mV	100.15 mV	101.10 mV	0.11 mV	
1 V Range					
1 V 1 kHz	0.999300 V	0.999972 V	1.000700 V	0.000058 V	
1 V 50 kHz	0.999000 V	1.000087 V	1.001000 V	0.000090 V	
1 V 300 kHz	0.98900 V	1.00200 V	1.01100 V	0.00052 V	
10 V Range					
0.03 V 1 kHz	0.02799 V	0.02974 V	0.03201 V	0.00040 V	
1 V 1 kHz	0.997500 V	0.999899 V	1.002500 V	0.000059 V	
10 V 10 Hz	9.9930 V	10.0001 V	10.0070 V	0.0029 V	
10 V 100 Hz	9.99300 V	9.99980 V	10.00700 V	0.00056 V	
10 V 20 kHz	9.99300 V	10.00007 V	10.00700 V	0.00058 V	
10 V 50 kHz	9.99000 V	10.00115 V	10.01000 V	0.00090 V	
10 V 100 kHz	9.9800 V	10.0031 V	10.0200 V	0.0013 V	
10 V 300 kHz	9.8900 V	10.0171 V	10.1100 V	0.0035 V	
100 V Range					
100 V 1 kHz	99.9300 V	99.9981 V	100.0700 V	0.0064 V	
100 V 50 kHz	99.9000 V	100.0095 V	100.1000 V	0.0098 V	
70 V 300 kHz	69.200 V	70.154 V	70.800 V	0.082 V	
750 V Range					
750 V 1 kHz	749.025 V	750.029 V	750.975 V	0.079 V	
210 V 50 kHz	209.628 V	210.022 V	210.372 V	0.024 V	
70 V 300 kHz	68.550 V	70.244 V	71.450 V	0.11 V	

FREQUENCY — Passed

The test limits correspond to the published 1 year specifications.
Pre-Repair/Adjustment Data:

TEST CONDITIONS	MINIMUM	MEASURED	MAXIMUM	UNCERT.	Status
Input Freq. (Front)					
------- -------					
1 V Range					
0.1 V 10 Hz	9.99700 Hz	10.00009 Hz	10.00300 Hz	0.00044 Hz	
0.1 V Range					
0.01 V 300 kHz	299.79000 kHz	300.00056 kHz	300.21000 kHz	0.0010 kHz	

OHMS — Passed

The test limits correspond to the published 1 year specifications.
Pre-Repair/Adjustment Data:

TEST CONDITIONS	MINIMUM	MEASURED	MAXIMUM	UNCERT.	Status
Range Input (Front)					
------- -------					
4-Wire Ohms					
100 Ω 100 Ω	99.9900 Ω	99.9996 Ω	100.0100 Ω	0.0016 Ω	
1 kΩ 1 kΩ	0.9999550 kΩ	0.9999962 kΩ	1.0000450 kΩ	0.0000089 kΩ	
10 kΩ 10 kΩ	9.999550 kΩ	9.999900 kΩ	10.000450 kΩ	0.00012 kΩ	
100 kΩ 100 kΩ	99.9955 kΩ	100.0024 kΩ	100.0045 kΩ	0.0018 kΩ	
1 MΩ 1 MΩ	0.999925 MΩ	1.000000 MΩ	1.000075 MΩ	0.000021 MΩ	
10 MΩ 10 MΩ	9.99740 MΩ	9.99935 MΩ	10.00260 MΩ	0.00051 MΩ	
2-Wire Ohms					
10 MΩ 10 MΩ	9.99740 MΩ	10.00015 MΩ	10.00260 MΩ	0.0010 MΩ	
100 MΩ 100 MΩ	99.699 MΩ	100.125 MΩ	100.301 MΩ	0.013 MΩ	

DC CURRENT — Passed

The test limits correspond to the published 1 year specifications.
Pre-Repair/Adjustment Data:

TEST CONDITIONS	MINIMUM	MEASURED	MAXIMUM	UNCERT.	Status
DC CURRENT					
Range Input (Front)					
3 A 2 A	1.99540 A	1.99981 A	2.00460 A	0.00029 A	
1 A 1 A	0.999100 A	0.999908 A	1.000900 A	0.00011 A	
100 mA 100 mA	99.9450 mA	99.9974 mA	100.0550 mA	0.0054 mA	
10 mA 10 mA	9.99300 mA	9.99952 mA	10.00700 mA	0.00043 mA	
1 mA 1 mA	0.999450 mA	0.999822 mA	1.000550 mA	0.000043 mA	

AC CURRENT — Passed

The test limits correspond to the published 1 year specifications.
Pre-Repair/Adjustment Data:

TEST CONDITIONS	MINIMUM	MEASURED	MAXIMUM	UNCERT.	Status
Input Freq. (Front)					
3 A Range					
2 A 1 kHz	1.99420 A	1.99964 A	2.00580 A	0.00058 A	
2 A 5 kHz	1.9942 A	2.0002 A	2.0058 A	0.0010 A	
1 A Range					
1 A 1 kHz	0.99860 A	0.99983 A	1.00140 A	0.00033 A	
1 A 5 kHz	0.99860 A	0.99987 A	1.00140 A	0.00055 A	
100 mA Range					
100 mA 10 Hz	99.860 mA	99.998 mA	100.140 mA	0.031 mA	
100 mA 1 kHz	99.860 mA	99.998 mA	100.140 mA	0.017 mA	
100 mA 5 kHz	99.860 mA	99.996 mA	100.140 mA	0.025 mA	
10 mA Range					
100 µA 1 kHz	0.09590 mA	0.10004 mA	0.10410 mA	0.00030 mA	
1 mA 1 kHz	0.99500 mA	1.00006 mA	1.00500 mA	0.00024 mA	
10 mA 1 kHz	9.9860 mA	9.9997 mA	10.0140 mA	0.0018 mA	
10 mA 5 kHz	9.9860 mA	10.0006 mA	10.0140 mA	0.0027 mA	
1 mA Range					
1 mA 1 kHz	0.99860 mA	0.99998 mA	1.00140 mA	0.00017 mA	
1 mA 5 kHz	0.99860 mA	0.99996 mA	1.00140 mA	0.00033 mA	

AC CURRENT (cont.)

TEST CONDITIONS	MINIMUM	MEASURED	MAXIMUM	UNCERT.	Status
100 uA Range					
100 µA 1 kHz	99.860 µA	100.001 µA	100.140 µA	0.022 µA	
100 µA 5 kHz	99.860 µA	100.012 µA	100.140 µA	0.042 µA	

HIGH CURRENT — Passed

The test limits correspond to the published 1 year specifications.
Pre-Repair/Adjustment Data:

TEST CONDITIONS	MINIMUM	MEASURED	MAXIMUM	UNCERT.	Status
DC HIGH CURRENT					
Range Input (Front)					
10 A 5 A	4.9930 A	4.9998 A	5.0070 A	0.0023 A	
10 A 10 A	9.9770 A	10.0019 A	10.0230 A	0.0042 A	
AC HIGH CURRENT					
Input Freq. (Front)					
10 A 5 kHz	9.971 A	10.000 A	10.029 A	0.010 A	

AUTO-CALIBRATION — As Expected

TEST CONDITIONS	RESULT	Status
Auto Calibration	DONE	

ACAL Info:
The Last ACAL Temp: 25.8 °C
The Last ACAL Date: 17 Oct 2022
Present ACAL Temp: 22.6 °C
Present ACAL Date: 19 Oct 2023

DC LOW CURRENT FUNC — As Expected

Pre-Repair/Adjustment Data:

TEST CONDITIONS		RESULT	Status
DC CURRENT			
Range	*Input (Front)*		
1 µA	1 µA	DONE	
10 µA	10 µA	DONE	
100 µA	100 µA	DONE	

ZERO OFFSET - FRONT TERMINALS — Passed

The test limits correspond to the published 1 year specifications.
Post-Repair/Adjustment Data:

TEST CONDITIONS		MINIMUM	MEASURED	MAXIMUM	UNCERT.	Status
Range	*Input*					
DC Volts Zero Offset						
100 mV	0 V	−3.50 µV	0.75 µV	3.50 µV	0.36 µV	
1 V	0 V	−4.00 µV	0.73 µV	4.00 µV	0.60 µV	
10 V	0 V	−40.0 µV	0.7 µV	40.0 µV	5.8 µV	
100 V	0 V	−0.600 mV	−0.004 mV	0.600 mV	0.062 mV	
1000 V	0 V	−6.00 mV	−0.09 mV	6.00 mV	0.58 mV	
4-Wire Ohms Zero Offset						
100 Ω	0 Ω	−4.00 mΩ	−0.28 mΩ	4.00 mΩ	0.19 mΩ	
1 kΩ	0 Ω	−5.00 mΩ	−0.16 mΩ	5.00 mΩ	0.60 mΩ	
10 kΩ	0 Ω	−50.0 mΩ	−3.4 mΩ	50.0 mΩ	6.1 mΩ	
100 kΩ	0 Ω	−0.500 Ω	−0.033 Ω	0.500 Ω	0.061 Ω	
1 MΩ	0 Ω	−5.00 Ω	−0.03 Ω	5.00 Ω	0.63 Ω	
10 MΩ	0 Ω	−100.0 Ω	−3.4 Ω	100.0 Ω	6.1 Ω	
2-Wire Ohms Zero Offset						
100 MΩ	0 Ω	−1000 Ω	2 Ω	1000 Ω	58 Ω	
DC Current Zero Offset						
1 mA	0 A	−0.05000 µA	−0.00004 µA	0.05000 µA	0.0011 µA	
10 mA	0 A	−2.0000 µA	0.0017 µA	2.0000 µA	0.057 µA	
100 mA	0 A	−5.000 µA	−0.014 µA	5.000 µA	0.064 µA	
1 A	0 A	−0.10000 mA	0.00058 mA	0.10000 mA	0.0012 mA	
3 A	0 A	−0.6000 mA	−0.0013 mA	0.6000 mA	0.0058 mA	
10 A	0 A	−1.0000 mA	−0.0005 mA	1.0000 mA	0.0059 mA	

ZERO OFFSET - REAR TERMINALS — Passed

The test limits correspond to the published 1 year specifications.
Post-Repair/Adjustment Data:

TEST CONDITIONS		MINIMUM	MEASURED	MAXIMUM	UNCERT.	Status
Range	*Input*					
DC Volts Zero Offset						
100 mV	0 V	−3.50 µV	1.09 µV	3.50 µV	0.19 µV	
1 V	0 V	−4.00 µV	0.82 µV	4.00 µV	0.58 µV	
10 V	0 V	−40.0 µV	0.6 µV	40.0 µV	5.8 µV	
100 V	0 V	−0.600 mV	−0.005 mV	0.600 mV	0.063 mV	
1000 V	0 V	−6.00 mV	−0.05 mV	6.00 mV	0.58 mV	

ZERO OFFSET - REAR TERMINALS (cont.)

TEST CONDITIONS	MINIMUM	MEASURED	MAXIMUM	UNCERT.	Status
4-Wire Ohms ZERO Offset					
100 Ω 0 Ω	−4.00 mΩ	0.07 mΩ	4.00 mΩ	0.18 mΩ	
1 kΩ 0 Ω	−5.00 mΩ	0.12 mΩ	5.00 mΩ	0.63 mΩ	
10 kΩ 0 Ω	−50.0 mΩ	0.8 mΩ	50.0 mΩ	6.0 mΩ	
100 kΩ 0 Ω	−0.500 Ω	−0.002 Ω	0.500 Ω	0.062 Ω	
1 MΩ 0 Ω	−5.00 Ω	0.30 Ω	5.00 Ω	0.59 Ω	
10 MΩ 0 Ω	−100.0 Ω	0.6 Ω	100.0 Ω	6.2 Ω	
2-Wire Ohms ZERO Offset					
100 MΩ 0 Ω	−1000 Ω	2 Ω	1000 Ω	58 Ω	
DC Current Zero Offset					
1 mA 0 A	−0.05000 µA	−0.00027 µA	0.05000 µA	0.00074 µA	
10 mA 0 A	−2.0000 µA	−0.1318 µA	2.0000 µA	0.042 µA	
100 mA 0 A	−5.000 µA	−0.039 µA	5.000 µA	0.081 µA	
1 A 0 A	−0.10000 mA	−0.00151 mA	0.10000 mA	0.00080 mA	
3 A 0 A	−0.6000 mA	−0.0013 mA	0.6000 mA	0.0058 mA	

DC VOLTS

Passed

The test limits correspond to the published 1 year specifications.
Post-Repair/Adjustment Data:

TEST CONDITIONS		MINIMUM	MEASURED	MAXIMUM	UNCERT.	Status
Range	*Input (Front)*					
100 mV	100 mV	99.9915 mV	100.0003 mV	100.0085 mV	0.0017 mV	
100 mV	-100 mV	−100.0085 mV	−99.9982 mV	−99.9915 mV	0.0017 mV	
1 V	1 V	0.9999610 V	0.9999994 V	1.0000390 V	0.0000064 V	
1 V	-1 V	−1.0000390 V	−0.9999976 V	−0.9999610 V	0.0000065 V	
10 V	4 V	3.999840 V	4.000000 V	4.000160 V	0.000019 V	
10 V	10 V	9.999660 V	9.999993 V	10.000340 V	0.000041 V	
10 V	-10 V	−10.000340 V	−9.999998 V	−9.999660 V	0.000041 V	
100 V	100 V	99.99540 V	99.99999 V	100.00460 V	0.00059 V	
100 V	-100 V	−100.00460 V	−99.99990 V	−99.99540 V	0.00060 V	
1000 V	1000 V	999.9440 V	1000.0006 V	1000.0560 V	0.0080 V	
1000 V	-500 V	−500.0260 V	−500.0003 V	−499.9740 V	0.0039 V	

AC VOLTS

Passed

The test limits correspond to the published 1 year specifications.
Post-Repair/Adjustment Data:

TEST CONDITIONS	MINIMUM	MEASURED	MAXIMUM	UNCERT.	Status
Input Freq. (Front)					
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100 mV Range					
100 mV 1 kHz	99.930 mV	100.002 mV	100.070 mV	0.017 mV	
100 mV 50 kHz	99.900 mV	100.001 mV	100.100 mV	0.030 mV	
100 mV 300 kHz	98.90 mV	99.92 mV	101.10 mV	0.11 mV	
1 V Range					
1 V 1 kHz	0.999300 V	0.999994 V	1.000700 V	0.000058 V	
1 V 50 kHz	0.999000 V	1.000013 V	1.001000 V	0.000090 V	
1 V 300 kHz	0.98900 V	0.99929 V	1.01100 V	0.00052 V	
10 V Range					
0.03 V 1 kHz	0.02799 V	0.02982 V	0.03201 V	0.00040 V	
1 V 1 kHz	0.997500 V	0.999961 V	1.002500 V	0.000059 V	
10 V 10 Hz	9.9930 V	10.0002 V	10.0070 V	0.0029 V	
10 V 100 Hz	9.99300 V	9.99983 V	10.00700 V	0.00056 V	
10 V 20 kHz	9.99300 V	9.99994 V	10.00700 V	0.00058 V	
10 V 50 kHz	9.99000 V	9.99999 V	10.01000 V	0.00090 V	
10 V 100 kHz	9.9800 V	9.9999 V	10.0200 V	0.0013 V	
10 V 300 kHz	9.8900 V	9.9933 V	10.1100 V	0.0035 V	
100 V Range					
100 V 1 kHz	99.9300 V	99.9995 V	100.0700 V	0.0064 V	
100 V 50 kHz	99.9000 V	99.9992 V	100.1000 V	0.0098 V	
70 V 300 kHz	69.200 V	69.979 V	70.800 V	0.082 V	
750 V Range					
750 V 1 kHz	749.025 V	750.037 V	750.975 V	0.079 V	
210 V 50 kHz	209.628 V	210.007 V	210.372 V	0.024 V	
70 V 300 kHz	68.550 V	70.108 V	71.450 V	0.11 V	

FREQUENCY — Passed

The test limits correspond to the published 1 year specifications.
Post-Repair/Adjustment Data:

TEST CONDITIONS	MINIMUM	MEASURED	MAXIMUM	UNCERT.	Status
Input Freq. (Front)					
1 V Range					
0.1 V 10 Hz	9.99700 Hz	9.99987 Hz	10.00300 Hz	0.00044 Hz	
0.1 V Range					
0.01 V 300 kHz	299.79000 kHz	300.00000 kHz	300.21000 kHz	0.0010 kHz	

OHMS — Passed

The test limits correspond to the published 1 year specifications.
Post-Repair/Adjustment Data:

TEST CONDITIONS	MINIMUM	MEASURED	MAXIMUM	UNCERT.	Status
Range Input (Front)					
4-Wire Ohms					
100 Ω 100 Ω	99.9900 Ω	100.0003 Ω	100.0100 Ω	0.0016 Ω	
1 kΩ 1 kΩ	0.9999550 kΩ	1.0000042 kΩ	1.0000450 kΩ	0.0000089 kΩ	
10 kΩ 10 kΩ	9.999550 kΩ	10.000022 kΩ	10.000450 kΩ	0.00012 kΩ	
100 kΩ 100 kΩ	99.9955 kΩ	99.9989 kΩ	100.0045 kΩ	0.0018 kΩ	
1 MΩ 1 MΩ	0.999925 MΩ	1.000011 MΩ	1.000075 MΩ	0.000021 MΩ	
10 MΩ 10 MΩ	9.99740 MΩ	10.00045 MΩ	10.00260 MΩ	0.00051 MΩ	
2-Wire Ohms					
10 MΩ 10 MΩ	9.99740 MΩ	10.00044 MΩ	10.00260 MΩ	0.0010 MΩ	
100 MΩ 100 MΩ	99.699 MΩ	100.013 MΩ	100.301 MΩ	0.013 MΩ	

DC CURRENT — Passed

The test limits correspond to the published 1 year specifications.
Post-Repair/Adjustment Data:

TEST CONDITIONS	MINIMUM	MEASURED	MAXIMUM	UNCERT.	Status
DC CURRENT					
Range Input (Front)					
3 A 2 A	1.99540 A	1.99994 A	2.00460 A	0.00029 A	
1 A 1 A	0.999100 A	1.000013 A	1.000900 A	0.00011 A	
100 mA 100 mA	99.9450 mA	100.0000 mA	100.0550 mA	0.0054 mA	
10 mA 10 mA	9.99300 mA	10.00013 mA	10.00700 mA	0.00043 mA	
1 mA 1 mA	0.999450 mA	0.999995 mA	1.000550 mA	0.000043 mA	

AC CURRENT — Passed

The test limits correspond to the published 1 year specifications.
Post-Repair/Adjustment Data:

TEST CONDITIONS	MINIMUM	MEASURED	MAXIMUM	UNCERT.	Status
Input Freq. (Front)					
3 A Range					
2 A 1 kHz	1.99420 A	2.00027 A	2.00580 A	0.00058 A	
2 A 5 kHz	1.9942 A	2.0004 A	2.0058 A	0.0010 A	
1 A Range					
1 A 1 kHz	0.99860 A	1.00012 A	1.00140 A	0.00033 A	
1 A 5 kHz	0.99860 A	0.99992 A	1.00140 A	0.00055 A	
100 mA Range					
100 mA 10 Hz	99.860 mA	99.996 mA	100.140 mA	0.031 mA	
100 mA 1 kHz	99.860 mA	100.000 mA	100.140 mA	0.017 mA	
100 mA 5 kHz	99.860 mA	99.997 mA	100.140 mA	0.025 mA	
10 mA Range					
100 µA 1 kHz	0.09590 mA	0.10016 mA	0.10410 mA	0.00030 mA	
1 mA 1 kHz	0.99500 mA	1.00012 mA	1.00500 mA	0.00024 mA	
10 mA 1 kHz	9.9860 mA	9.9999 mA	10.0140 mA	0.0018 mA	
10 mA 5 kHz	9.9860 mA	10.0003 mA	10.0140 mA	0.0027 mA	
1 mA Range					
1 mA 1 kHz	0.99860 mA	0.99999 mA	1.00140 mA	0.00017 mA	
1 mA 5 kHz	0.99860 mA	0.99999 mA	1.00140 mA	0.00033 mA	

AC CURRENT (cont.)

TEST CONDITIONS	MINIMUM	MEASURED	MAXIMUM	UNCERT.	Status
100 uA Range					
100 µA 1 kHz	99.860 µA	100.001 µA	100.140 µA	0.022 µA	
100 µA 5 kHz	99.860 µA	100.003 µA	100.140 µA	0.042 µA	

HIGH CURRENT — Passed

The test limits correspond to the published 1 year specifications.
Post-Repair/Adjustment Data:

TEST CONDITIONS	MINIMUM	MEASURED	MAXIMUM	UNCERT.	Status
DC HIGH CURRENT					
Range Input (Front)					
10 A 5 A	4.9930 A	4.9999 A	5.0070 A	0.0023 A	
10 A 10 A	9.9770 A	10.0021 A	10.0230 A	0.0042 A	
AC HIGH CURRENT					
Input Freq. (Front)					
10 A 5 kHz	9.971 A	9.999 A	10.029 A	0.010 A	

AUTO-CALIBRATION — As Expected

TEST CONDITIONS	RESULT	Status
Auto Calibration	DONE	

ACAL Info:
The Last ACAL Temp: 25.8 °C
The Last ACAL Date: 19 Oct 2023
Present ACAL Temp: 26.2 °C
Present ACAL Date: 19 Oct 2023

DC LOW CURRENT FUNC — As Expected

Post-Repair/Adjustment Data:

TEST CONDITIONS		RESULT	Status
DC CURRENT			
Range	*Input (Front)*		
1 µA	1 µA	DONE	
10 µA	10 µA	DONE	
100 µA	100 µA	DONE	