

Manufacturer	HEWLETT-PACKARD	Calibration date	July 29 2022
Model Number	34420A	Ambient Temperature	25.15 °C
Serial	US36000404	Relative Humidity	42.90 %
ID Number	Calibration test, FF unit	Pressure	1004.37
Notes	Test after adjustment, repaired	Test type	Compound_K262

This note is test dummy text block for further use. It allow to include user information for further reference

Reference standard	Mfg	Model	Options	Serial / Unc	CEID	Calibration date	Due date
DCC	MIL	6010B		REDACTED	XRB1	01/23/2022	02/23/2022
MFC	Fluke	5720A	03/HLK	7530212	XHC1	02/07/2022	08/07/2022
Amplifier	Fluke	5725A		5930005	XHB1	02/07/2022	08/07/2022
DC STD	xDevs.com	792X[2]	9.9999805 VDC	±0.9 ppm	XD01	10/26/2021	10/26/2022
STDR	ESI	SR104	10000.0013 KΩ	±0.2 ppm	G202088930104	10/26/2021	10/26/2023
STDR	xDevs.com/Fluke	SL935	1.00006304 Ω	±0.31 ppm	XR03	10/28/2021	10/28/2022
STDR	xDevs.com/Fluke	SL935	9999.9757 kΩ	±0.36 ppm	XR02	10/28/2021	10/28/2022
DMM	HP	3458A	001,X02	MY45040325	XD2	10/26/2021	10/26/2022
DMM	HP	3458A	001,X02	Process DMM	XD3	10/26/2021	10/26/2022
Divider	Fluke	752A	4295200		XR01	02/10/2022	03/10/2022
Divider	Keithley	262	None	138523	XZ02	07/28/2022	08/28/2022

MFC last calibrated	21.0 days ago	MFC since DCV ZERO	2.0 days ago
MFC since WBFLAT	566.0 days ago	MFC since WBGAIN	172.0 days ago
MFC Confidence level	<b>24h 95% REL</b>	MFC Calibrate date	2022-07-08 00:00:00
MFC Calibrate date Zero	2022-07-27 00:00:00	Calibrate date WB Flatness	2021-10-09 00:00:00
Calibrate date WB Gain	2022-02-07 00:00:00	CAL CONST 6.5V reference voltage	6.957479747585243
CAL CONST 13V reference voltage	13.8553055726994	CAL CONST 22V range positive zero	398.17832
CAL CONST 22V range negative zero	398.17795	CAL CONST DAC Linearity	0.0
CAL CONST 10KOHM true output resistance	9999.818995109088	CAL CONST 10KOHM standard resistance	9998.758762400104

CAL CONST, Zero calibration temperature	26.0	CAL CONST, All calibration temp	26.0
Booster type	VB5725,IB5725	Current output posts	AUX
Calibrate date 5725A AMP	1988-10-01 00:00:00	Calibrated days ago	2027-12-06 00:00:00
CAL CONST, Amp ACAL temperature	23.0	CAL CONST, Amp CalCheck temperature	23.0

Total uncertainty of each calibration point calculated with RSS

$$U_{95\%} = \sqrt{U_{SRC}^2 + U_{DUT}^2} * 2$$

Meter Info	HEWLETT-PACKARD,34420A,0,3.0-5.0-2.0	Test date start	29 July 2022 00:31
Test specification interval	<b>24 hour DUT spec</b>	Line frequency	120V 60 Hz
Next calibration date	29 JUL 2023	Last calibration date	11 FEB 1997
DUT temperature to cal	+2.1	Last calibration string	"11 FEB 1997 25.0C"
Last 2 calibration temperature	+23.2	Selected input terminal	FRON

Service information

Calibration string	"29.JUL.2022, TEMP=+25.15C, xDevs.com CF2"
Calibrations counter	35.0
Reference	
Performance check	
DUT Condition	Ambient +23C

Test procedure : \$Id: hp34420a.py | Rev 2431 | 2022/07/29 04:31:01 Illya \$

Source procedure : \$Id: f5720b.py | Rev 2426 | 2022/07/28 21:47:23 tin\_sl \$

Main DC Voltage ranges Zero performance test.  
 Checks zero offset and +/-FS calibration on all ranges  
 The following test for the offset voltage specification using Low thermal LEMO 4-wire short as reference.

Test Description	Expected Value	Measured Value	Measurement Uncertainty	Lower Limit	Upper Limit	Deviation	DUT Spec	Test Status
Short 1 mVDC CH1	0.000000E+00	<b>0.01 <math>\mu</math>V</b>	0.50 $\mu$ V	-0.620 $\mu$ V	0.620 $\mu$ V	N/A	0.12 $\mu$ V	PASS
Short 10 mVDC CH1	0.000000E+00	<b>0.01 <math>\mu</math>V</b>	0.50 $\mu$ V	-0.630 $\mu$ V	0.630 $\mu$ V	N/A	0.13 $\mu$ V	PASS
Short 100 mVDC CH1	0.000000E+00	<b>0.00 <math>\mu</math>V</b>	0.50 $\mu$ V	-0.900 $\mu$ V	0.900 $\mu$ V	N/A	0.40 $\mu$ V	PASS
Short 1.0 VDC CH1	0.000000E+00	<b>-0.41 <math>\mu</math>V</b>	0.50 $\mu$ V	-4.500 $\mu$ V	4.500 $\mu$ V	N/A	4.00 $\mu$ V	PASS
Short 10.0 VDC CH1	0.000000E+00	<b>0.80 <math>\mu</math>V</b>	0.50 $\mu$ V	-40.500 $\mu$ V	40.500 $\mu$ V	N/A	40.00 $\mu$ V	PASS
Short 100.0 VDC CH1	0.000000E+00	<b>-30.00 <math>\mu</math>V</b>	0.50 $\mu$ V	-500.500 $\mu$ V	500.500 $\mu$ V	N/A	0.50 mV	PASS
Short 1 mVDC CH2	0.000000E+00	<b>-0.01 <math>\mu</math>V</b>	0.50 $\mu$ V	-0.620 $\mu$ V	0.620 $\mu$ V	N/A	0.12 $\mu$ V	PASS
Short 10 mVDC CH2	0.000000E+00	<b>-0.00 <math>\mu</math>V</b>	0.50 $\mu$ V	-0.630 $\mu$ V	0.630 $\mu$ V	N/A	0.13 $\mu$ V	PASS
Short 100 mVDC CH2	0.000000E+00	<b>0.01 <math>\mu</math>V</b>	0.50 $\mu$ V	-0.900 $\mu$ V	0.900 $\mu$ V	N/A	0.40 $\mu$ V	PASS
Short 1.0 VDC CH2	0.000000E+00	<b>-0.12 <math>\mu</math>V</b>	0.50 $\mu$ V	-4.500 $\mu$ V	4.500 $\mu$ V	N/A	4.00 $\mu$ V	PASS
Short 10.0 VDC CH2	0.000000E+00	<b>0.80 <math>\mu</math>V</b>	0.50 $\mu$ V	-40.500 $\mu$ V	40.500 $\mu$ V	N/A	40.00 $\mu$ V	PASS

Main DC Voltage ranges performance test. Checks +/-FS calibration on all ranges.

The following test for the gain voltage specification using MFC 0V source in 4-wire ext sense mode as reference. DCV gain range points verify gain of the DC voltage function, using uncorrected 24-hour MFC output.

DC voltage offset of DUT is nulled before FS tests. Ranges 0.001 to 0.1 V are verified with low thermal divider

DCV Test	0.01V-100V	DUT	Source unc.	Low Limit	Hi limit	Measured	24h spec	Result
0.0001 VDC (0.001 Range)	0.00010	<b>9.99966450e-05</b>	36.0 ppm	9.99919000e-05	1.00008100e-04	-33.550 ppm	45.0 ppm	PASS 41.42 %
0.0005 VDC (0.001 Range)	0.00050	<b>4.99994110e-04</b>	24.0 ppm	4.99965500e-04	5.00034500e-04	-11.780 ppm	45.0 ppm	PASS 17.07 %
0.001 VDC (0.001 Range)	0.00100	<b>9.99985785e-04</b>	18.0 ppm	9.99937000e-04	1.00006300e-03	-14.215 ppm	45.0 ppm	PASS 22.56 %
-0.001 VDC (0.001 Range)	-0.00100	<b>-9.99983380e-04</b>	18.0 ppm	-1.00006300e-03	-9.99937000e-04	-16.620 ppm	45.0 ppm	PASS 26.38 %
-0.0005 VDC (0.001 Range)	-0.00050	<b>-4.99995185e-04</b>	24.0 ppm	-5.00034500e-04	-4.99965500e-04	-9.630 ppm	45.0 ppm	PASS 13.96 %
-0.0001 VDC (0.001 Range)	-0.00010	<b>-9.99991700e-05</b>	36.0 ppm	-1.00008100e-04	-9.99919000e-05	-8.300 ppm	45.0 ppm	PASS 10.25 %
0.001 VDC (0.010 Range)	0.00100	<b>9.99973050e-04</b>	16.0 ppm	9.99939000e-04	1.00006100e-03	-26.950 ppm	45.0 ppm	PASS 44.18 %
0.005 VDC (0.010 Range)	0.00500	<b>4.99986725e-03</b>	12.0 ppm	4.99971500e-03	5.00028500e-03	-26.550 ppm	45.0 ppm	PASS 46.58 %
0.01 VDC (0.010 Range)	0.01000	<b>9.99974670e-03</b>	9.0 ppm	9.99946000e-03	1.00005400e-02	-25.330 ppm	45.0 ppm	PASS 46.91 %
-0.01 VDC (0.010 Range)	-0.01000	<b>-9.99975240e-03</b>	9.0 ppm	-1.00005400e-02	-9.99946000e-03	-24.760 ppm	45.0 ppm	PASS 45.85 %
-0.005 VDC (0.010 Range)	-0.00500	<b>-4.99986410e-03</b>	12.0 ppm	-5.00028500e-03	-4.99971500e-03	-27.180 ppm	45.0 ppm	PASS 47.68 %
-0.001 VDC (0.010 Range)	-0.00100	<b>-9.99978700e-04</b>	16.0 ppm	-1.00006100e-03	-9.99939000e-04	-21.300 ppm	45.0 ppm	PASS 34.92 %
0.01 VDC (0.100 Range)	0.01000	<b>9.99997300e-03</b>	11.0 ppm	9.99971000e-03	1.00002900e-02	-2.700 ppm	18.0 ppm	PASS 9.31 %
0.05 VDC (0.100 Range)	0.05000	<b>4.99998095e-02</b>	9.0 ppm	4.99986500e-02	5.00013500e-02	-3.810 ppm	18.0 ppm	PASS 14.11 %
0.1 VDC (0.100 Range)	0.10000	<b>9.99997185e-02</b>	8.0 ppm	9.99974000e-02	1.00002600e-01	-2.815 ppm	18.0 ppm	PASS 10.83 %
-0.1 VDC (0.100 Range)	-0.10000	<b>-9.99997505e-02</b>	8.0 ppm	-1.00002600e-01	-9.99974000e-02	-2.495 ppm	18.0 ppm	PASS 9.60 %
-0.05 VDC (0.100 Range)	-0.05000	<b>-4.99998545e-02</b>	9.0 ppm	-5.00013500e-02	-4.99986500e-02	-2.910 ppm	18.0 ppm	PASS 10.78 %
-0.01 VDC (0.100 Range)	-0.01000	<b>-9.99997300e-03</b>	11.0 ppm	-1.00002900e-02	-9.99971000e-03	-2.700 ppm	18.0 ppm	PASS 9.31 %
0.1 VDC (1.000 Range)	0.10000	<b>1.00000230e-01</b>	2.8 ppm	9.99984230e-02	1.00001577e-01	2.300 ppm	13.0 ppm	PASS 14.58 %
0.5 VDC (1.000 Range)	0.50000	<b>4.99999990e-01</b>	3.7 ppm	4.99991635e-01	5.00008365e-01	-0.020 ppm	13.0 ppm	PASS 0.12 %
1.0 VDC (1.000 Range)	1.00000	<b>1.00000000e+00</b>	3.7 ppm	9.99983270e-01	1.00001673e+00	0.000 ppm	13.0 ppm	PASS 0.00 %
-1.0 VDC (1.000 Range)	-1.00000	<b>-1.00000105e+00</b>	2.8 ppm	-1.00001577e+00	-9.99984230e-01	1.050 ppm	13.0 ppm	PASS 6.66 %
-0.5 VDC (1.000 Range)	-0.50000	<b>-5.00000970e-01</b>	3.7 ppm	-5.00008365e-01	-4.99991635e-01	1.940 ppm	13.0 ppm	PASS 11.60 %
-0.1 VDC (1.000 Range)	-0.10000	<b>-1.00000270e-01</b>	3.7 ppm	-1.00001673e-01	-9.99983270e-02	2.700 ppm	13.0 ppm	PASS 16.14 %
1.0 VDC (10.000 Range)	1.00000	<b>9.99998950e-01</b>	3.7 ppm	9.99993270e-01	1.00000673e+00	-1.050 ppm	3.0 ppm	PASS 15.60 %
7.0 VDC (10.000 Range)	7.00000	<b>6.99999310e+00</b>	3.7 ppm	6.99995289e+00	7.00004711e+00	-0.986 ppm	3.0 ppm	PASS 14.65 %
10.0 VDC (10.000 Range)	10.00000	<b>9.99999540e+00</b>	5.5 ppm	9.99991550e+00	1.00000845e+01	-0.460 ppm	3.0 ppm	PASS 5.44 %
-10.0 VDC (10.000 Range)	-10.00000	<b>-9.99999990e+00</b>	3.7 ppm	-1.00000673e+01	-9.99993270e+00	-0.010 ppm	3.0 ppm	PASS 0.15 %
-7.0 VDC (10.000 Range)	-7.00000	<b>-7.00000070e+00</b>	3.7 ppm	-7.00004711e+00	-6.99995289e+00	0.100 ppm	3.0 ppm	PASS 1.49 %
-1.0 VDC (10.000 Range)	-1.00000	<b>-1.00000060e+00</b>	5.5 ppm	-1.00000845e+00	-9.99991550e-01	0.600 ppm	3.0 ppm	PASS 7.10 %
10.0 VDC (100.000 Range)	10.00000	<b>9.99992850e+00</b>	3.7 ppm	9.99982270e+00	1.00001773e+01	-7.150 ppm	14.0 ppm	PASS 40.33 %
20.0 VDC (100.000 Range)	20.00000	<b>1.99998930e+01</b>	3.7 ppm	1.99996454e+01	2.00003546e+01	-5.350 ppm	14.0 ppm	PASS 30.17 %
100.0 VDC (100.000 Range)	100.00000	<b>9.99997590e+01</b>	5.5 ppm	9.99980550e+01	1.00001945e+02	-2.410 ppm	14.0 ppm	PASS 12.39 %
-100.0 VDC (100.000 Range)	-100.00000	<b>-9.99998990e+01</b>	3.7 ppm	-1.00001773e+02	-9.99982270e+01	-1.010 ppm	14.0 ppm	PASS 5.70 %
-20.0 VDC (100.000 Range)	-20.00000	<b>-1.99999660e+01</b>	3.7 ppm	-2.00003546e+01	-1.99996454e+01	-1.700 ppm	14.0 ppm	PASS 9.59 %
-10.0 VDC (100.000 Range)	-10.00000	<b>-9.99998450e+00</b>	5.5 ppm	-1.00001945e+01	-9.99980550e+00	-1.550 ppm	14.0 ppm	PASS 7.97 %

DCV Test CH2	0.1V-10V	DUT	Source unc.	Low Limit	Hi limit	Measured	24h spec	Result
0.0001 VDC (0.00 Range)	0.00010	<b>9.99984150e-05</b>	36.0 ppm	9.99919000e-05	1.00008100e-04	-15.850 ppm	45.0 ppm	PASS 19.57 %
0.0005 VDC (0.00 Range)	0.00050	<b>4.99993165e-04</b>	24.0 ppm	4.99965500e-04	5.00034500e-04	-13.670 ppm	45.0 ppm	PASS 19.81 %
0.001 VDC (0.00 Range)	0.00100	<b>9.99984470e-04</b>	18.0 ppm	9.99937000e-04	1.00006300e-03	-15.530 ppm	45.0 ppm	PASS 24.65 %
-0.001 VDC (0.00 Range)	-0.00100	<b>-9.99983060e-04</b>	18.0 ppm	-1.00006300e-03	-9.99937000e-04	-16.940 ppm	45.0 ppm	PASS 26.89 %
-0.0005 VDC (0.00 Range)	-0.00050	<b>-4.99992280e-04</b>	24.0 ppm	-5.00034500e-04	-4.99965500e-04	-15.440 ppm	45.0 ppm	PASS 22.38 %
-0.0001 VDC (0.00 Range)	-0.00010	<b>-9.99965200e-05</b>	36.0 ppm	-1.00008100e-04	-9.99919000e-05	-34.800 ppm	45.0 ppm	PASS 42.96 %
0.001 VDC (0.01 Range)	0.00100	<b>9.99973050e-04</b>	16.0 ppm	9.99939000e-04	1.00006100e-03	-26.950 ppm	45.0 ppm	PASS 44.18 %
0.005 VDC (0.01 Range)	0.00500	<b>4.99986220e-03</b>	12.0 ppm	4.99971500e-03	5.00028500e-03	-27.560 ppm	45.0 ppm	PASS 48.35 %
0.01 VDC (0.01 Range)	0.01000	<b>9.99974545e-03</b>	9.0 ppm	9.99946000e-03	1.00005400e-02	-25.455 ppm	45.0 ppm	PASS 47.14 %
-0.01 VDC (0.01 Range)	-0.01000	<b>-9.99974800e-03</b>	9.0 ppm	-1.00005400e-02	-9.99946000e-03	-25.200 ppm	45.0 ppm	PASS 46.67 %
-0.005 VDC (0.01 Range)	-0.00500	<b>-4.99986345e-03</b>	12.0 ppm	-5.00028500e-03	-4.99971500e-03	-27.310 ppm	45.0 ppm	PASS 47.91 %
-0.001 VDC (0.01 Range)	-0.00100	<b>-9.99967950e-04</b>	16.0 ppm	-1.00006100e-03	-9.99939000e-04	-32.050 ppm	45.0 ppm	PASS 52.54 %
0.01 VDC (0.10 Range)	0.01000	<b>9.99996050e-03</b>	11.0 ppm	9.99971000e-03	1.00002900e-02	-3.950 ppm	18.0 ppm	PASS 13.62 %
0.05 VDC (0.10 Range)	0.05000	<b>4.99997585e-02</b>	9.0 ppm	4.99986500e-02	5.00013500e-02	-4.830 ppm	18.0 ppm	PASS 17.89 %
0.1 VDC (0.10 Range)	0.10000	<b>9.99996225e-02</b>	8.0 ppm	9.99974000e-02	1.00002600e-01	-3.775 ppm	18.0 ppm	PASS 14.52 %
-0.1 VDC (0.10 Range)	-0.10000	<b>-9.99996675e-02</b>	8.0 ppm	-1.00002600e-01	-9.99974000e-02	-3.325 ppm	18.0 ppm	PASS 12.79 %
-0.05 VDC (0.10 Range)	-0.05000	<b>-4.99997970e-02</b>	9.0 ppm	-5.00013500e-02	-4.99986500e-02	-4.060 ppm	18.0 ppm	PASS 15.04 %
-0.01 VDC (0.10 Range)	-0.01000	<b>-9.99996200e-03</b>	11.0 ppm	-1.00002900e-02	-9.99971000e-03	-3.800 ppm	18.0 ppm	PASS 13.10 %
0.1 VDC (1.00 Range)	0.10000	<b>1.00000180e-01</b>	2.8 ppm	9.99984230e-02	1.00001577e-01	1.800 ppm	13.0 ppm	PASS 11.41 %
0.5 VDC (1.00 Range)	0.50000	<b>4.99999785e-01</b>	3.7 ppm	4.99991635e-01	5.00008365e-01	-0.430 ppm	13.0 ppm	PASS 2.57 %
1.0 VDC (1.00 Range)	1.00000	<b>9.99999650e-01</b>	3.7 ppm	9.99983270e-01	1.00001673e+00	-0.350 ppm	13.0 ppm	PASS 2.09 %
-1.0 VDC (1.00 Range)	-1.00000	<b>-1.00000140e+00</b>	2.8 ppm	-1.00001577e+00	-9.99984230e-01	1.400 ppm	13.0 ppm	PASS 8.88 %
-0.5 VDC (1.00 Range)	-0.50000	<b>-5.00000975e-01</b>	3.7 ppm	-5.00008365e-01	-4.99991635e-01	1.950 ppm	13.0 ppm	PASS 11.66 %
-0.1 VDC (1.00 Range)	-0.10000	<b>-1.00000130e-01</b>	3.7 ppm	-1.00001673e-01	-9.99983270e-02	1.300 ppm	13.0 ppm	PASS 7.77 %
1.0 VDC (10.00 Range)	1.00000	<b>9.99996700e-01</b>	3.7 ppm	9.99993270e-01	1.00000673e+00	-3.300 ppm	3.0 ppm	PASS 49.03 %
7.0 VDC (10.00 Range)	7.00000	<b>6.99999250e+00</b>	3.7 ppm	6.99995289e+00	7.00004711e+00	-1.071 ppm	3.0 ppm	PASS 15.92 %
10.0 VDC (10.00 Range)	10.00000	<b>9.99999705e+00</b>	5.5 ppm	9.99991550e+00	1.00000845e+01	-0.295 ppm	3.0 ppm	PASS 3.49 %
-10.0 VDC (10.00 Range)	-10.00000	<b>-9.99999985e+00</b>	3.7 ppm	-1.00000673e+01	-9.99993270e+00	-0.015 ppm	3.0 ppm	PASS 0.22 %
-7.0 VDC (10.00 Range)	-7.00000	<b>-6.99999920e+00</b>	3.7 ppm	-7.00004711e+00	-6.99995289e+00	-0.114 ppm	3.0 ppm	PASS 1.70 %
-1.0 VDC (10.00 Range)	-1.00000	<b>-1.00000130e+00</b>	5.5 ppm	-1.00000845e+00	-9.99991550e-01	1.300 ppm	3.0 ppm	PASS 15.38 %

4W and 2W Zero test procedure for all test points that verify Zero offset of the OHMF function. 4-wire LEMO short installed at the DUT.

OHM ZERO 4W	DUT	Source unc.	Low Limit	Hi limit	Measured	24h spec	Result
1 ΩRange	<b>-0.0000005 Ω</b>	2.000e-06 Ω	-2e-06	2e-06	N/A	9.5000e-06 Ω	PASS
10 ΩRange	<b>-0.0000001 Ω</b>	2.000e-05 Ω	-2e-05	2e-05	N/A	2.8000e-06 Ω	PASS
100 ΩRange	<b>-0.0000030 Ω</b>	2.000e-04 Ω	-0.0002	0.0002	N/A	2.8000e-06 Ω	PASS
1k ΩRange	<b>-0.0004150 Ω</b>	2.000e-03 Ω	-0.002	0.002	N/A	2.8000e-06 Ω	PASS
10k ΩRange	<b>-0.0019000 Ω</b>	2.000e-02 Ω	-0.02	0.02	N/A	2.8000e-06 Ω	PASS
100k ΩRange	<b>-0.0030000 Ω</b>	4.000e-01 Ω	-0.4	0.4	N/A	2.8000e-06 Ω	PASS
1M ΩRange	<b>0.2500000 Ω</b>	4.000e+00 Ω	-4	4	N/A	2.8000e-06 Ω	PASS
OHM ZERO 4W Low V/P	DUT	Source unc.	Low Limit	Hi limit	Measured	24h spec	Result

1 ΩRange LoV	<b>0.0000009 Ω</b>	2.000e-06 Ω	-2e-06	2e-06	N/A	9.5000e-06 Ω	PASS
10 ΩRange LoV	<b>0.0000034 Ω</b>	2.000e-05 Ω	-2e-05	2e-05	N/A	2.8000e-06 Ω	PASS
100 ΩRange LoV	<b>0.0000745 Ω</b>	2.000e-04 Ω	-0.0002	0.0002	N/A	2.8000e-06 Ω	PASS
1k ΩRange LoV	<b>0.0001600 Ω</b>	2.000e-03 Ω	-0.002	0.002	N/A	2.8000e-06 Ω	PASS
10k ΩRange LoV	<b>0.0025500 Ω</b>	2.000e-02 Ω	-0.02	0.02	N/A	2.8000e-06 Ω	PASS
100k ΩRange LoV	<b>-0.0065000 Ω</b>	4.000e-01 Ω	-0.4	0.4	N/A	2.8000e-06 Ω	PASS
1M ΩRange LoV	<b>0.1300000 Ω</b>	4.000e+00 Ω	-4	4	N/A	2.8000e-06 Ω	PASS
<b>OHM ZERO 2W</b>	<b>DUT</b>	<b>Source unc.</b>	<b>Low Limit</b>	<b>Hi limit</b>	<b>Measured</b>	<b>24h spec</b>	<b>Result</b>
1 ΩRange	<b>-0.0237981 Ω</b>	2.000e-01 Ω	-0.2	0.2	N/A	9.5000e-06 Ω	PASS
10 ΩRange	<b>-0.0237897 Ω</b>	2.000e-01 Ω	-0.2	0.2	N/A	2.8000e-06 Ω	PASS
100 ΩRange	<b>-0.0237470 Ω</b>	2.000e-01 Ω	-0.2	0.2	N/A	2.8000e-06 Ω	PASS
1k ΩRange	<b>-0.0242400 Ω</b>	2.000e-01 Ω	-0.2	0.2	N/A	2.8000e-06 Ω	PASS
10k ΩRange	<b>-0.0258500 Ω</b>	2.200e-01 Ω	-0.22	0.22	N/A	2.8000e-06 Ω	PASS
100k ΩRange	<b>-0.0350000 Ω</b>	6.000e-01 Ω	-0.6	0.6	N/A	2.8000e-06 Ω	PASS
1M ΩRange	<b>-0.0650000 Ω</b>	4.200e+00 Ω	-4.2	4.2	N/A	2.8000e-06 Ω	PASS

4W test procedure for all test points that verify Gain of the OHMF function. 4-wire kelvin connection is used between DMM and MFC.

<b>OHM Test</b>	<b>Reference</b>	<b>DUT</b>	<b>Source unc.</b>	<b>Low Limit</b>	<b>Hi limit</b>	<b>Measured</b>	<b>24h spec</b>	<b>Result</b>
1 Ω	0.9997689 Ω	<b>0.999761855 Ω</b>	85.0 ppm	9.9958892E-01	9.9994888E-01	-7.047 ppm	95.02 ppm	PASS, 5.53 % of 127.49 ppm
1.9 Ω	1.8997939 Ω	<b>1.89974895 Ω</b>	85.0 ppm	1.8995329E+00	1.9000549E+00	-23.660 ppm	52.37 ppm	PASS, 23.70 % of 99.84 ppm
10 Ω	10.000591 Ω	<b>10.000614 Ω</b>	23.0 ppm	1.0000221E+01	1.0000961E+01	2.300 ppm	14.00 ppm	PASS, 8.54 % of 26.93 ppm
19 Ω	19.000192 Ω	<b>19.000232 Ω</b>	23.0 ppm	1.8999570E+01	1.9000814E+01	2.105 ppm	9.74 ppm	PASS, 8.43 % of 24.98 ppm
100 Ω	99.99593 Ω	<b>99.996311 Ω</b>	10.0 ppm	9.9993830E+01	9.9998030E+01	3.810 ppm	11.00 ppm	PASS, 25.63 % of 14.87 ppm
190 Ω	189.99194 Ω	<b>189.99133 Ω</b>	10.0 ppm	1.8998849E+02	1.8999539E+02	-3.211 ppm	8.16 ppm	PASS, 24.88 % of 12.91 ppm
1.0 kΩ	1000.021 Ω	<b>1000.022 Ω</b>	8.0 ppm	1.0000099E+03	1.0000321E+03	1.000 ppm	3.10 ppm	PASS, 11.66 % of 8.58 ppm
1.9 kΩ	1899.88 Ω	<b>1899.8771 Ω</b>	8.0 ppm	1.8998595E+03	1.8999005E+03	-1.526 ppm	2.82 ppm	PASS, 18.00 % of 8.48 ppm
10 kΩ	9999.8 Ω	<b>9999.8122 Ω</b>	8.0 ppm	9.9996890E+03	9.9999110E+03	1.220 ppm	3.10 ppm	PASS, 14.22 % of 8.58 ppm
19 kΩ	18999.277 Ω	<b>18999.293 Ω</b>	9.0 ppm	1.8999053E+04	1.8999501E+04	0.842 ppm	2.82 ppm	PASS, 8.93 % of 9.43 ppm
100 kΩ	99994.76 Ω	<b>99994.915 Ω</b>	9.0 ppm	9.9993210E+04	9.9996310E+04	1.550 ppm	6.50 ppm	PASS, 13.96 % of 11.10 ppm
190 kΩ	189989.18	<b>189990.95</b>	9.00 ppm	1.8998633E+05	1.8999203E+05	9.316 ppm	6.0 ppm	PASS, 86.01 % of 10.83 ppm
1.0 MΩ	999983.7 Ω	<b>999982.73 Ω</b>	16.0 ppm	9.9995510E+05	1.0000123E+06	-0.970 ppm	12.60 ppm	PASS, 4.76 % of 20.37 ppm

4W Low power test procedure for all test points that verify Gain of the OHMF LoV function. 4-wire kelvin connection is used between DMM and MFC.

<b>OHM LowV/P Test</b>	<b>Reference</b>	<b>DUT</b>	<b>Source unc.</b>	<b>Low Limit</b>	<b>Hi limit</b>	<b>Measured</b>	<b>24h spec</b>	<b>Result</b>
1 Ω Lol	0.9997689 Ω	<b>0.999761285 Ω</b>	85.0 ppm	9.9958892E-01	9.9994888E-01	-7.617 ppm	95.02 ppm	PASS, 5.97 % of 127.49 ppm
1.9 LolV Ω Lol	1.8997939	<b>1.8996164</b>	85.00 ppm	1.8995329E+00	1.9000549E+00	-93.405 ppm	52.4 ppm	PASS, 93.55 % of 99.84 ppm
10 LolV Ω Lol+LoV	10.000591 Ω	<b>10.000615 Ω</b>	23.0 ppm	1.0000221E+01	1.0000961E+01	2.400 ppm	14.00 ppm	PASS, 8.91 % of 26.93 ppm
19 LolV Ω Lol+LoV	19.000192 Ω	<b>19.000251 Ω</b>	23.0 ppm	1.8999570E+01	1.9000814E+01	3.105 ppm	9.74 ppm	PASS, 12.43 % of 24.98 ppm
100 LolV Ω Lol+LoV	99.99593 Ω	<b>99.996331 Ω</b>	10.0 ppm	9.9993830E+01	9.9998030E+01	4.010 ppm	11.00 ppm	PASS, 26.97 % of 14.87 ppm
190 Ω Lol	189.99194 Ω	<b>189.99126 Ω</b>	10.0 ppm	1.8998849E+02	1.8999539E+02	-3.579 ppm	8.16 ppm	PASS, 27.73 % of 12.91 ppm
1.0 kΩ Lol	1000.021 Ω	<b>1000.0222 Ω</b>	8.0 ppm	1.0000099E+03	1.0000321E+03	1.200 ppm	3.10 ppm	PASS, 13.99 % of 8.58 ppm

1.9 kΩ Lol	1899.88 Ω	<b>1899.8785 Ω</b>	8.0 ppm	1.8998595E+03	1.8999005E+03	-0.790 ppm	2.82 ppm	PASS, 9.31 % of 8.48 ppm
10 kΩ Lol	9999.8 Ω	<b>9999.8144 Ω</b>	8.0 ppm	9.9996890E+03	9.9999110E+03	1.440 ppm	3.10 ppm	PASS, 16.78 % of 8.58 ppm
19 kΩ Lol	18999.277 Ω	<b>18999.274 Ω</b>	9.0 ppm	1.8999053E+04	1.8999501E+04	-0.158 ppm	2.82 ppm	PASS, 1.67 % of 9.43 ppm
100 kΩ Lol	99994.76 Ω	<b>99994.887 Ω</b>	9.0 ppm	9.9993210E+04	9.9996310E+04	1.270 ppm	6.50 ppm	PASS, 11.44 % of 11.10 ppm
190 kΩ Lol	189989.18 Ω	<b>189990.82 Ω</b>	9.0 ppm	1.8998633E+05	1.8999203E+05	8.632 ppm	6.03 ppm	PASS, 79.70 % of 10.83 ppm
1.0 MΩ Lol	999983.7 Ω	<b>999982.605 Ω</b>	16.0 ppm	9.9995510E+05	1.0000123E+06	-1.095 ppm	12.60 ppm	PASS, 5.38 % of 20.37 ppm

2-wire resistance test procedure for all test points that verify Gain of the OHM function. 2-wire direct connection is used between DMM and MFC with LEMO cable.

OHM 2W	Reference	DUT	Source unc.	Low Limit	Hi limit	Measured	24h spec	Result
1 Ω 2W	0.9997689 Ω	<b>1.484276 Ω</b>	85.0 ppm	9.9588921E-02	1.8999489E+00	0.4846 %	900303.06 ppm	PASS, 53.83 % of 900303.06 ppm
1.9 Ω 2W	1.8997939 Ω	<b>2.3599081 Ω</b>	85.0 ppm	9.9953292E-01	2.8000549E+00	0.2422 %	473787.97 ppm	PASS, 51.12 % of 473787.98 ppm
10 Ω 2W	10.000591 Ω	<b>10.487285 Ω</b>	23.0 ppm	9.1002210E+00	1.0900961E+01	0.0487 %	90008.68 ppm	PASS, 54.07 % of 90008.68 ppm
19 Ω 2W	19.000192 Ω	<b>19.474519 Ω</b>	23.0 ppm	1.8099570E+01	1.9900814E+01	0.0250 %	47377.68 ppm	PASS, 52.69 % of 47377.68 ppm
100 Ω 2W	99.99593 Ω	<b>100.48442 Ω</b>	10.0 ppm	9.9093830E+01	1.0089803E+02	4885.099 ppm	9011.37 ppm	PASS, 54.21 % of 9011.37 ppm
190 Ω 2W	189.99194 Ω	<b>190.45391 Ω</b>	10.0 ppm	1.8908849E+02	1.9089539E+02	2431.524 ppm	4745.20 ppm	PASS, 51.24 % of 4745.21 ppm
1.0 kΩ 2W	1000.021 Ω	<b>1000.4977 Ω</b>	8.0 ppm	9.9910990E+02	1.0009321E+03	476.690 ppm	903.08 ppm	PASS, 52.78 % of 903.12 ppm
1.9 kΩ 2W	1899.88 Ω	<b>1900.284 Ω</b>	8.0 ppm	1.8989595E+03	1.9008005E+03	212.645 ppm	476.53 ppm	PASS, 44.62 % of 476.60 ppm
10 kΩ 2W	9999.8 Ω	<b>10000.366 Ω</b>	8.0 ppm	9.9987890E+03	1.0000811E+04	56.601 ppm	93.10 ppm	PASS, 60.57 % of 93.44 ppm
19 kΩ 2W	18999.277 Ω	<b>19000.02 Ω</b>	9.0 ppm	1.8998153E+04	1.9000401E+04	39.107 ppm	50.19 ppm	PASS, 76.70 % of 50.99 ppm
100 kΩ 2W	99994.76 Ω	<b>99995.775 Ω</b>	9.0 ppm	9.9992310E+04	9.9997210E+04	10.151 ppm	15.50 ppm	PASS, 56.63 % of 17.92 ppm
190 kΩ 2W	189989.18 Ω	<b>189991.145 Ω</b>	9.0 ppm	1.8998543E+05	1.8999293E+05	10.343 ppm	10.76 ppm	PASS, 73.72 % of 14.03 ppm
1.0 MΩ 2W	999983.7 Ω	<b>999984.94 Ω</b>	16.0 ppm	9.9995420E+05	1.0000132E+06	1.240 ppm	13.50 ppm	PASS, 5.92 % of 20.93 ppm

Test completed

Test date	29 July 2022 02:32
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Lab temperature maintained +23°C ±3°C

Internal use only

Not validated

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