

Manufacturer	HEWLETT-PACKARD	Calibration date	April 25 2020
Model Number	3458A	Ambient Temperature	24.66 °C
Serial	STD5	Relative Humidity	55.70 %
ID Number	PostCalibration test, GPIB5 unit	Pressure	1013.90
Notes	Test front spade cables	Test type	Front Fluke DIY cables, 5-wire

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
CAL MFC	Fluke	5700A	/03 WB	XXX	MC01	3/25/2020	3/25/2021
Booster	Fluke	5725A		XXX	MB02	3/25/2020	3/25/2021
DC STD	Fluke	732B-3	9.999928 VDC	±0.55 ppm	SV03	03/20/2020	03/20/2020
STDR	Ohm Labs 200	1 Ohm	1.0000005	±0.17 ppm	SM02	02/20/2020	03/20/2021
STDR	ESI	SR104	10000.054 KΩ	±0.15 ppm	SM01	03/01/2020	03/01/2021

MFC last calibrated	31.0 days ago	MFC since DCV ZERO	7.0 days ago
MFC since WBFLAT	11803.0 days ago	MFC since WBGAIN	31.0 days ago
MFC Confidence level	<b>24h 95% REL</b>	MFC Calibrate date	2020-03-25 00:00:00
MFC Calibrate date Zero	2020-04-18 00:00:00	Calibrate date WB Flatness	1988-10-01 00:00:00
Calibrate date WB Gain	2020-03-25 00:00:00	CAL CONST 6.5V reference voltage	6.89136058816
CAL CONST 13V reference voltage	13.7948138313	CAL CONST 22V range positive zero	398.17871
CAL CONST 22V range negative zero	398.17836	CAL CONST DAC Linearity	-0.316920424792
CAL CONST 10KOHM true output resistance	10000.0794564	CAL CONST 10KOHM standard resistance	10000.4504017
CAL CONST, Zero calibration temperature	23.1700000763	CAL CONST, All calibration temp	23.1700000763
Booster type	VB5725,IB5725	Current output posts	AUX
Calibrate date 5725A AMP	2020-03-25 00:00:00	Calibrated days ago	Debug
CAL CONST, Amp ACAL temperature	23.5400009155	CAL CONST, Amp CalCheck temperature	23.1700000763

Total uncertainty of each calibration point calculated with RSS



Main DC Voltage ranges performance test.

Checks zero offset and +/-FS calibration on all ranges

The following test for the offset 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.

Test Description	Expected Value	Measured Value	Measurement Uncertainty	Lower Limit	Upper Limit	Deviation	DUT Spec	Test Status
Short 0 mVDC	0.000000E+00	<b>-0.03 µV</b>	0.75 µV	-0.910 µV	0.910 µV	N/A	0.16 µV	PASS
Short 0.0 VDC	0.000000E+00	<b>0.22 µV</b>	0.75 µV	-0.900 µV	0.900 µV	N/A	0.15 µV	PASS
Short 00.0 VDC	0.000000E+00	<b>0.51 µV</b>	0.75 µV	-1.070 µV	1.070 µV	N/A	0.32 µV	PASS
Short 000.0 VDC	0.000000E+00	<b>5.62 µV</b>	0.75 µV	-14.750 µV	14.750 µV	N/A	14.00 µV	PASS
Short 0000.0 VDC	0.000000E+00	<b>-14.05 µV</b>	0.75 µV	-41.750 µV	41.750 µV	N/A	41.00 µV	PASS
DCV Test	0.1V-1000V	DUT	Source unc.	Low Limit	Hi limit	Measured	24h spec	Result
0.019 VDC (0.10 Range)	0.0190000	<b>0.019000034</b>	7.27 ppm	0.018999514	0.019000486	1.776 ppm	18.29 ppm	PASS 4.51 %
0.1 VDC (0.10 Range)	0.1000000	<b>0.10000005</b>	7.27 ppm	0.099998723	0.10000128	0.450 ppm	5.50 ppm	PASS 2.47 %
0.11 VDC (0.10 Range)	0.1100000	<b>0.11000006</b>	7.27 ppm	0.10999863	0.11000137	0.520 ppm	5.23 ppm	PASS 2.90 %
-0.019 VDC (0.10 Range)	-0.0190000	<b>-0.018999966</b>	7.27 ppm	-0.019000486	-0.018999514	-1.814 ppm	18.29 ppm	PASS 4.61 %
-0.1 VDC (0.10 Range)	-0.1000000	<b>-0.099999878</b>	7.27 ppm	-0.10000128	-0.099998723	-1.221 ppm	5.50 ppm	PASS 6.69 %
-0.11 VDC (0.10 Range)	-0.1100000	<b>-0.10999993</b>	7.27 ppm	-0.11000137	-0.10999863	-0.598 ppm	5.23 ppm	PASS 3.34 %
0.19 VDC (1.00 Range)	0.1900000	<b>0.19000038</b>	7.27 ppm	0.18999803	0.19000197	1.977 ppm	3.08 ppm	PASS 12.52 %
1.0 VDC (1.00 Range)	1.0000000	<b>1.0000002</b>	3.86 ppm	0.99999434	1.0000057	0.224 ppm	1.80 ppm	PASS 2.63 %
1.1 VDC (1.00 Range)	1.1000000	<b>1.1000001</b>	3.86 ppm	1.0999938	1.1000062	0.066 ppm	1.77 ppm	PASS 0.78 %
-0.19 VDC (1.00 Range)	-0.1900000	<b>-0.18999979</b>	7.27 ppm	-0.19000197	-0.18999803	-1.099 ppm	3.08 ppm	PASS 6.96 %
-1.0 VDC (1.00 Range)	-1.0000000	<b>-0.99999981</b>	3.86 ppm	-1.0000057	-0.99999434	-0.188 ppm	1.80 ppm	PASS 2.20 %
-1.1 VDC (1.00 Range)	-1.1000000	<b>-1.0999998</b>	3.86 ppm	-1.1000062	-1.0999938	-0.209 ppm	1.77 ppm	PASS 2.46 %
1.9 VDC (10.00 Range)	1.9000000	<b>1.9000005</b>	3.86 ppm	1.8999912	1.9000088	0.268 ppm	0.76 ppm	PASS 3.41 %
10.0 VDC (10.00 Range)	10.0000000	<b>10.000002</b>	2.77 ppm	9.9999668	10.000033	0.225 ppm	0.55 ppm	PASS 3.98 %
11.0 VDC (10.00 Range)	11.0000000	<b>11.000002</b>	2.73 ppm	10.999964	11.000036	0.194 ppm	0.55 ppm	PASS 3.48 %
-1.9 VDC (10.00 Range)	-1.9000000	<b>-1.899999</b>	3.86 ppm	-1.9000088	-1.8999912	-0.523 ppm	0.76 ppm	PASS 6.64 %
-10.0 VDC (10.00 Range)	-10.0000000	<b>-10.000003</b>	2.77 ppm	-10.000033	-9.9999668	0.345 ppm	0.55 ppm	PASS 6.11 %
-11.0 VDC (10.00 Range)	-11.0000000	<b>-11.000004</b>	2.73 ppm	-11.000036	-10.999964	0.338 ppm	0.55 ppm	PASS 6.07 %
19 VDC (100.00 Range)	19.0000000	<b>19.000031</b>	2.77 ppm	18.99987	19.00013	1.615 ppm	4.08 ppm	PASS 16.38 %
100 VDC (100.00 Range)	100.0000000	<b>100.00002</b>	3.73 ppm	99.999347	100.00065	0.213 ppm	2.80 ppm	PASS 2.28 %
110 VDC (100.00 Range)	110.0000000	<b>110</b>	3.73 ppm	109.99928	110.00072	-0.039 ppm	2.77 ppm	PASS 0.42 %
-19 VDC (100.00 Range)	-19.0000000	<b>-19.000003</b>	2.77 ppm	-19.00013	-18.99987	0.165 ppm	4.08 ppm	PASS 1.67 %
-100 VDC (100.00 Range)	-100.0000000	<b>-100.00002</b>	3.73 ppm	-100.00065	-99.999347	0.194 ppm	2.80 ppm	PASS 2.09 %
-110 VDC (100.00 Range)	-110.0000000	<b>-110</b>	3.73 ppm	-110.00072	-109.99928	0.007 ppm	2.77 ppm	PASS 0.08 %
190 VDC (1000.00 Range)	190.0000000	<b>189.9999</b>	3.73 ppm	189.99872	190.00128	-0.552 ppm	3.03 ppm	PASS 5.74 %
500 VDC (1000.00 Range)	500.0000000	<b>500.00052</b>	3.73 ppm	499.99678	500.00322	1.033 ppm	2.70 ppm	PASS 13.84 %
1000 VDC (1000.00 Range)	1000.0000000	<b>999.99624</b>	5.45 ppm	999.97995	1000.02	-3.756 ppm	2.60 ppm	PASS 14.25 %
-190 VDC (1000.00 Range)	-190.0000000	<b>-189.9997</b>	3.73 ppm	-190.00128	-189.99872	-1.559 ppm	3.03 ppm	PASS 16.23 %
-500 VDC (1000.00 Range)	-500.0000000	<b>-500.00046</b>	3.73 ppm	-500.00322	-499.99678	0.915 ppm	2.70 ppm	PASS 3.64 %
-1000 VDC (1000.00 Range)	-1000.0000000	<b>-999.99647</b>	5.45 ppm	-1000.02	-999.97995	-3.535 ppm	2.60 ppm	PASS 13.41 %

4W test procedure for all test points that verify Gain of the OHMF function. 4-wire kelvin connection is used between DMM and MFC.  
 1GΩ resistance range is tested using the external standard, as MFC unable to provide this range value.

OHM Test	Reference	DUT	Source unc.	Low Limit	Hi limit	Measured	24h spec	Result
1 Ω	0.9998149 Ω	<b>0.99977554 Ω</b>	32.0 ppm	9.9974791E-01	9.9988189E-01	-39.363 ppm	35.01 ppm	PASS, 41.50 % of 94.86 ppm
1.9 Ω	1.8995691	<b>1.8994602</b>	25.00 ppm	1.8994821E+00	1.8996561E+00	-57.346 ppm	20.8 ppm	PASS, 88.18 % of 65.03 ppm
10 Ω	9.999919 Ω	<b>9.999909 Ω</b>	5.0 ppm	9.9997890E+00	1.0000049E+01	-0.995 ppm	8.00 ppm	PASS, 5.27 % of 18.87 ppm
19 Ω	18.999097 Ω	<b>18.999068 Ω</b>	4.0 ppm	1.8998664E+01	1.8999530E+01	-1.538 ppm	18.79 ppm	PASS, 4.00 % of 38.42 ppm
100 Ω	100.00167 Ω	<b>100.00173 Ω</b>	1.7 ppm	1.0000090E+02	1.0000244E+02	0.607 ppm	6.00 ppm	PASS, 4.87 % of 12.47 ppm
190 Ω	189.99489 Ω	<b>189.99517 Ω</b>	1.7 ppm	1.8999399E+02	1.8999579E+02	1.450 ppm	3.05 ppm	PASS, 20.74 % of 6.99 ppm
1.0 kΩ	999.9911 kΩ	<b>999.99169 kΩ</b>	1.7 ppm	9.9998720E+02	9.9999500E+02	0.591 ppm	2.20 ppm	PASS, 10.63 % of 5.56 ppm
1.9 kΩ	1899.9963 kΩ	<b>1899.9967 kΩ</b>	1.7 ppm	1.8999873E+03	1.9000053E+03	0.194 ppm	3.05 ppm	PASS, 2.78 % of 6.99 ppm
10 kΩ	10000.084 kΩ	<b>10000.079 kΩ</b>	1.6 ppm	1.0000046E+04	1.0000122E+04	-0.450 ppm	2.20 ppm	PASS, 8.28 % of 5.44 ppm
19 kΩ	18999.698 kΩ	<b>18999.698 kΩ</b>	1.7 ppm	1.8999608E+04	1.8999788E+04	-0.025 ppm	3.05 ppm	PASS, 0.35 % of 6.99 ppm
100 kΩ	100001.49	<b>100000.98</b>	2.00 ppm	1.0000107E+05	1.0000191E+05	-5.071 ppm	2.2 ppm	PASS, 85.28 % of 5.95 ppm
190 kΩ	189993.04 kΩ	<b>189992.8 kΩ</b>	2.0 ppm	1.8998976E+05	1.8999632E+05	-1.274 ppm	15.26 ppm	PASS, 4.14 % of 30.79 ppm
1.0 MΩ	1000004.5 MΩ	<b>999999.17 MΩ</b>	2.5 ppm	9.9999100E+05	1.0000180E+06	-5.332 ppm	11.00 ppm	PASS, 23.63 % of 22.56 ppm
1.9 MΩ	1899959.3 MΩ	<b>1899946.3 MΩ</b>	3.0 ppm	1.8998086E+06	1.9001100E+06	-6.860 ppm	76.32 ppm	PASS, 4.49 % of 152.75 ppm
10 MΩ	9999426 MΩ	<b>9999176.2 MΩ</b>	10.0 ppm	9.9987760E+06	1.0000076E+07	-24.979 ppm	55.00 ppm	PASS, 22.34 % of 111.80 ppm
19 MΩ	18999119 MΩ	<b>18999700 MΩ</b>	20.0 ppm	1.8988239E+07	1.9009999E+07	30.605 ppm	552.63 ppm	PASS, 2.77 % of 1105.99 ppm
100 MΩ	1.0000973E+08 MΩ	<b>1.0002003E+08 MΩ</b>	50.0 ppm	9.9953725E+07	1.0006574E+08	102.947 ppm	510.00 ppm	PASS, 10.04 % of 1024.89 ppm

4W and 2W Zero test procedure for all test points that verify Zero offset of the OHMF function. 4-wire kelvin connection is used between DMM and MFC. 1GΩ resistance range is tested using the external standard, as MFC unable to provide this range value.

OHM ZERO 4W	DUT	Source unc.	Low Limit	Hi limit	Measured	24h spec	Result
10 Ω	Range 0.000032 Ω	5.000e-05 Ω	-5e-05	5e-05	N/A	8.0000e-06 Ω	PASS
100 Ω	Range 0.0000338 Ω	5.500e-04 Ω	-0.00055	0.00055	N/A	2.2000e-06 Ω	PASS
1.0 kΩ	Range -0.0000396 Ω	5.500e-03 Ω	-0.0055	0.0055	N/A	2.2000e-06 Ω	PASS
10 kΩ	Range -0.0012952 Ω	5.500e-02 Ω	-0.055	0.055	N/A	2.2000e-06 Ω	PASS
100 kΩ	Range 0.0032378 Ω	5.500e-01 Ω	-0.55	0.55	N/A	2.2000e-06 Ω	PASS
1.0 MΩ	Range -0.1151748 Ω	5.500e+00 Ω	-5.5	5.5	N/A	2.2000e-06 Ω	PASS
10 MΩ	Range -0.3238033 Ω	5.500e+01 Ω	-55	55	N/A	2.2000e-06 Ω	PASS
100 MΩ	Range -0.6476066 Ω	5.500e+02 Ω	-550	550	N/A	2.2000e-06 Ω	PASS
1 GΩ	Range -1.2232568 Ω	5.500e+03 Ω	-5500	5500	N/A	2.2000e-06 Ω	PASS
OHM ZERO 2W	DUT	Source unc.	Low Limit	Hi limit	Measured	24h spec	Result
10 Ω	Range 0.2613090 Ω	3.000e-01 Ω	-0.3	0.3	N/A	8.0000e-06 Ω	PASS
100 Ω	Range 0.2556564 Ω	3.500e-01 Ω	-0.35	0.35	N/A	2.2000e-06 Ω	PASS
1.0 kΩ	Range 0.2525977 Ω	4.000e-01 Ω	-0.4	0.4	N/A	2.2000e-06 Ω	PASS
10 kΩ	Range 0.2385472 Ω	4.000e-01 Ω	-0.4	0.4	N/A	2.2000e-06 Ω	PASS
100 kΩ	Range 0.2183745 Ω	5.500e-01 Ω	-0.55	0.55	N/A	2.2000e-06 Ω	PASS
1.0 MΩ	Range 0.4247070 Ω	5.500e+00 Ω	-5.5	5.5	N/A	2.2000e-06 Ω	PASS
10 MΩ	Range 1.5470570 Ω	5.500e+01 Ω	-55	55	N/A	2.2000e-06 Ω	PASS
100 MΩ	Range 2.9861808 Ω	5.500e+02 Ω	-550	550	N/A	2.2000e-06 Ω	PASS
1 GΩ	Range 3.0221589 Ω	5.500e+03 Ω	-5500	5500	N/A	2.2000e-06 Ω	PASS

Procedure for all test points in the AC performance verification for SYNCronous mode. This is highest AC accuracy test. AC-measurements does not suffer from TEMF offsets, test connection can be made using shielded leads terminated with dual banana plugs. MFC main AC output is used as reference source

ACV SYNC Test	DUT	w/Guardband	Low Limit	Hi limit	Measured	24h spec	Result, % spec
0.01 V AC+DC @ 10 Hz	<b>0.010073116</b>	0.0312 %	-0.290006	0.310006	0.7312 %	3000.0300 %	PASS 0.01 %
0.01 V AC+DC @ 20 Hz	<b>0.01007233</b>	0.0312 %	-0.290006	0.310006	0.7233 %	3000.0300 %	PASS 0.01 %
0.01 V AC+DC @ 40 Hz	<b>0.010073566</b>	0.0312 %	-0.290006	0.310006	0.7357 %	3000.0300 %	PASS 0.01 %
0.01 V AC+DC @ 100 Hz	<b>0.011040656</b>	0.0312 %	-0.100005	0.120005	10.4066 %	1100.0200 %	PASS 0.47 %
0.01 V AC+DC @ 1.0 kHz	<b>0.010089517</b>	0.0312 %	-0.100005	0.120005	0.8952 %	1100.0200 %	PASS 0.04 %
0.01 V AC+DC @ 10.0 kHz	<b>0.010071277</b>	0.0312 %	-0.100006	0.120006	0.7128 %	1100.0300 %	PASS 0.03 %
0.01 V AC+DC @ 20.0 kHz	<b>0.010091846</b>	0.0312 %	-0.100006	0.120006	0.9185 %	1100.0300 %	PASS 0.04 %
0.01 V AC+DC @ 50.0 kHz	<b>0.010073434</b>	0.0447 %	-0.100014	0.120014	0.7343 %	1100.1000 %	PASS 0.03 %
0.01 V AC+DC @ 100.0 kHz	<b>0.010051628</b>	0.0773 %	-0.100058	0.120058	0.5163 %	1100.5000 %	PASS 0.02 %
0.01 V AC+DC @ 300.0 kHz	<b>0.0098999196</b>	0.1500 %	-0.190055	0.210055	-1.0008 %	2000.4000 %	PASS 0.03 %
0.01 V AC+DC @ 500.0 kHz	<b>0.0096771063</b>	0.2500 %	-0.490070	0.510070	-3.2289 %	5000.4500 %	PASS 0.03 %
0.01 V AC+DC @ 1.0 MHz	<b>0.0088167667</b>	0.4000 %	-0.490085	0.510085	-11.8323 %	5000.4500 %	PASS 0.12 %
0.03 V AC+DC @ 10 Hz	<b>0.030188474</b>	0.0121 %	0.029994	0.030006	0.6282 %	0.0083 %	FAIL 2133.75 %
0.03 V AC+DC @ 20 Hz	<b>0.030183521</b>	0.0121 %	0.029994	0.030006	0.6117 %	0.0083 %	FAIL 2077.67 %
0.03 V AC+DC @ 40 Hz	<b>0.030179725</b>	0.0121 %	0.029994	0.030006	0.5991 %	0.0083 %	FAIL 2034.70 %
0.03 V AC+DC @ 100 Hz	<b>0.030185933</b>	0.0121 %	0.029994	0.030006	0.6198 %	0.0077 %	FAIL 2158.78 %
0.03 V AC+DC @ 1.0 kHz	<b>0.030184644</b>	0.0121 %	0.029994	0.030006	0.6155 %	0.0077 %	FAIL 2143.81 %
0.03 V AC+DC @ 10.0 kHz	<b>0.030186703</b>	0.0121 %	0.029992	0.030008	0.6223 %	0.0147 %	FAIL 1634.59 %
0.03 V AC+DC @ 20.0 kHz	<b>0.030178579</b>	0.0121 %	0.029992	0.030008	0.5953 %	0.0147 %	FAIL 1563.47 %
0.03 V AC+DC @ 50.0 kHz	<b>0.030178596</b>	0.0256 %	0.029983	0.030017	0.5953 %	0.0307 %	FAIL 744.70 %
0.03 V AC+DC @ 100.0 kHz	<b>0.03016653</b>	0.0591 %	0.029958	0.030042	0.5551 %	0.0807 %	FAIL 277.57 %
0.03 V AC+DC @ 300.0 kHz	<b>0.030118305</b>	0.0964 %	0.029880	0.030120	0.3943 %	0.3033 %	PASS 61.95 %
0.03 V AC+DC @ 500.0 kHz	<b>0.030076611</b>	0.1500 %	0.029654	0.030346	0.2554 %	1.0033 %	PASS 12.59 %
0.03 V AC+DC @ 1.0 MHz	<b>0.030266789</b>	0.3000 %	0.029609	0.030391	0.8893 %	1.0033 %	PASS 42.46 %
0.1 V AC+DC @ 10 Hz	<b>0.10004929</b>	0.0121 %	0.099980	0.100020	0.0493 %	0.0074 %	FAIL 173.39 %
0.1 V AC+DC @ 20 Hz	<b>0.1000474</b>	0.0121 %	0.099980	0.100020	0.0474 %	0.0074 %	FAIL 166.72 %
0.1 V AC+DC @ 40 Hz	<b>0.10004483</b>	0.0121 %	0.099980	0.100020	0.0448 %	0.0074 %	FAIL 157.71 %
0.1 V AC+DC @ 100 Hz	<b>0.10004988</b>	0.0121 %	0.099981	0.100019	0.0499 %	0.0072 %	FAIL 176.75 %
0.1 V AC+DC @ 1.0 kHz	<b>0.10005222</b>	0.0121 %	0.099981	0.100019	0.0522 %	0.0072 %	FAIL 185.03 %
0.1 V AC+DC @ 10.0 kHz	<b>0.10005139</b>	0.0121 %	0.099974	0.100026	0.0514 %	0.0142 %	FAIL 137.55 %
0.1 V AC+DC @ 20.0 kHz	<b>0.10004526</b>	0.0121 %	0.099974	0.100026	0.0453 %	0.0142 %	FAIL 121.16 %
0.1 V AC+DC @ 50.0 kHz	<b>0.1000396</b>	0.0256 %	0.099944	0.100056	0.0396 %	0.0302 %	PASS 49.99 %
0.1 V AC+DC @ 100.0 kHz	<b>0.1000024</b>	0.0591 %	0.099861	0.100139	0.0024 %	0.0802 %	PASS 1.21 %
0.1 V AC+DC @ 300.0 kHz	<b>0.099831843</b>	0.0964 %	0.099603	0.100397	-0.1682 %	0.3010 %	PASS 26.60 %
0.1 V AC+DC @ 500.0 kHz	<b>0.099701116</b>	0.1500 %	0.098849	0.101151	-0.2989 %	1.0010 %	PASS 14.76 %
0.1 V AC+DC @ 1.0 MHz	<b>0.099974431</b>	0.3000 %	0.098699	0.101301	-0.0256 %	1.0010 %	PASS 1.22 %
0.3 V AC+DC @ 10 Hz	<b>0.30001137</b>	0.0050 %	0.299960	0.300040	0.0038 %	0.0083 %	PASS 19.55 %
0.3 V AC+DC @ 20 Hz	<b>0.30001088</b>	0.0050 %	0.299960	0.300040	0.0036 %	0.0083 %	PASS 18.71 %
0.3 V AC+DC @ 40 Hz	<b>0.30000254</b>	0.0050 %	0.299960	0.300040	0.0008 %	0.0083 %	PASS 4.36 %
0.3 V AC+DC @ 100 Hz	<b>0.30000708</b>	0.0050 %	0.299962	0.300038	0.0024 %	0.0077 %	PASS 12.93 %

0.3 V AC+DC @ 1.0 kHz	<b>0.30001365</b>	0.0050 %	0.299962	0.300038	0.0045 %	0.0077 %	PASS 24.92 %
0.3 V AC+DC @ 10.0 kHz	<b>0.30002115</b>	0.0050 %	0.299941	0.300059	0.0071 %	0.0147 %	PASS 22.77 %
0.3 V AC+DC @ 20.0 kHz	<b>0.29999656</b>	0.0050 %	0.299941	0.300059	-0.0011 %	0.0147 %	PASS 3.70 %
0.3 V AC+DC @ 50.0 kHz	<b>0.30000607</b>	0.0085 %	0.299882	0.300118	0.0020 %	0.0307 %	PASS 3.18 %
0.3 V AC+DC @ 100.0 kHz	<b>0.30003334</b>	0.0138 %	0.299717	0.300283	0.0111 %	0.0807 %	PASS 6.79 %
0.3 V AC+DC @ 300.0 kHz	<b>0.30035484</b>	0.0425 %	0.298962	0.301038	0.1183 %	0.3033 %	PASS 19.31 %
0.3 V AC+DC @ 500.0 kHz	<b>0.30099208</b>	0.1100 %	0.296660	0.303340	0.3307 %	1.0033 %	PASS 16.38 %
0.3 V AC+DC @ 1.0 MHz	<b>0.30291687</b>	0.1800 %	0.296450	0.303550	0.9723 %	1.0033 %	PASS 47.69 %
1.0 V AC+DC @ 10 Hz	<b>1.0000384</b>	0.0050 %	0.999876	1.000124	0.0038 %	0.0074 %	PASS 21.56 %
1.0 V AC+DC @ 20 Hz	<b>1.0000143</b>	0.0050 %	0.999876	1.000124	0.0014 %	0.0074 %	PASS 8.02 %
1.0 V AC+DC @ 40 Hz	<b>1.000011</b>	0.0050 %	0.999876	1.000124	0.0011 %	0.0074 %	PASS 6.17 %
1.0 V AC+DC @ 100 Hz	<b>1.0000056</b>	0.0050 %	0.999878	1.000122	0.0006 %	0.0072 %	PASS 3.19 %
1.0 V AC+DC @ 1.0 kHz	<b>1.000032</b>	0.0050 %	0.999878	1.000122	0.0032 %	0.0072 %	PASS 18.29 %
1.0 V AC+DC @ 10.0 kHz	<b>1.000028</b>	0.0050 %	0.999808	1.000192	0.0028 %	0.0142 %	PASS 9.30 %
1.0 V AC+DC @ 20.0 kHz	<b>0.99998972</b>	0.0050 %	0.999808	1.000192	-0.0010 %	0.0142 %	PASS 3.42 %
1.0 V AC+DC @ 50.0 kHz	<b>1.0000024</b>	0.0085 %	0.999613	1.000387	0.0002 %	0.0302 %	PASS 0.38 %
1.0 V AC+DC @ 100.0 kHz	<b>1.0000474</b>	0.0138 %	0.999060	1.000940	0.0047 %	0.0802 %	PASS 2.91 %
1.0 V AC+DC @ 300.0 kHz	<b>1.0012034</b>	0.0425 %	0.996565	1.003435	0.1203 %	0.3010 %	PASS 19.79 %
1.0 V AC+DC @ 500.0 kHz	<b>1.0033271</b>	0.1100 %	0.988890	1.011110	0.3327 %	1.0010 %	PASS 16.52 %
1.0 V AC+DC @ 1.0 MHz	<b>1.0117655</b>	0.1800 %	0.988190	1.011810	1.1765 %	1.0010 %	PASS 57.84 %
3.0 V AC+DC @ 10 Hz	<b>2.9999597</b>	0.0048 %	2.999605	3.000395	-0.0013 %	0.0083 %	PASS 6.98 %
3.0 V AC+DC @ 20 Hz	<b>2.9998661</b>	0.0048 %	2.999605	3.000395	-0.0045 %	0.0083 %	PASS 23.18 %
3.0 V AC+DC @ 40 Hz	<b>2.9998429</b>	0.0048 %	2.999605	3.000395	-0.0052 %	0.0083 %	PASS 27.20 %
3.0 V AC+DC @ 100 Hz	<b>2.9998529</b>	0.0048 %	2.999625	3.000375	-0.0049 %	0.0077 %	PASS 27.08 %
3.0 V AC+DC @ 1.0 kHz	<b>2.9998941</b>	0.0048 %	2.999625	3.000375	-0.0035 %	0.0077 %	PASS 19.50 %
3.0 V AC+DC @ 10.0 kHz	<b>2.9998004</b>	0.0048 %	2.999415	3.000585	-0.0067 %	0.0147 %	PASS 21.55 %
3.0 V AC+DC @ 20.0 kHz	<b>2.9998488</b>	0.0048 %	2.999415	3.000585	-0.0050 %	0.0147 %	PASS 16.33 %
3.0 V AC+DC @ 50.0 kHz	<b>2.9999819</b>	0.0085 %	2.998824	3.001176	-0.0006 %	0.0307 %	PASS 0.95 %
3.0 V AC+DC @ 100.0 kHz	<b>2.9998117</b>	0.0121 %	2.997216	3.002784	-0.0063 %	0.0807 %	PASS 3.85 %
3.0 V AC+DC @ 300.0 kHz	<b>2.9989659</b>	0.0336 %	2.989891	3.010109	-0.0345 %	0.3033 %	PASS 5.65 %
3.0 V AC+DC @ 500.0 kHz	<b>3.0033437</b>	0.1100 %	2.966600	3.033400	0.1115 %	1.0033 %	PASS 5.52 %
3.0 V AC+DC @ 1.0 MHz	<b>3.0256608</b>	0.1700 %	2.964800	3.035200	0.8554 %	1.0033 %	PASS 42.03 %
10.0 V AC+DC @ 10 Hz	<b>10.000441</b>	0.0048 %	9.998778	10.001222	0.0044 %	0.0074 %	PASS 24.99 %
10.0 V AC+DC @ 20 Hz	<b>10.000151</b>	0.0048 %	9.998778	10.001222	0.0015 %	0.0074 %	PASS 8.56 %
10.0 V AC+DC @ 40 Hz	<b>10.000094</b>	0.0048 %	9.998778	10.001222	0.0009 %	0.0074 %	PASS 5.30 %
10.0 V AC+DC @ 100 Hz	<b>10.000057</b>	0.0048 %	9.998798	10.001202	0.0006 %	0.0072 %	PASS 3.27 %
10.0 V AC+DC @ 1.0 kHz	<b>10.000214</b>	0.0048 %	9.998798	10.001202	0.0021 %	0.0072 %	PASS 12.38 %
10.0 V AC+DC @ 10.0 kHz	<b>9.9998333</b>	0.0048 %	9.998098	10.001902	-0.0017 %	0.0142 %	PASS 5.56 %
10.0 V AC+DC @ 20.0 kHz	<b>10.000034</b>	0.0048 %	9.998098	10.001902	0.0003 %	0.0142 %	PASS 1.14 %
10.0 V AC+DC @ 50.0 kHz	<b>10.000417</b>	0.0085 %	9.996125	10.003875	0.0042 %	0.0302 %	PASS 6.64 %
10.0 V AC+DC @ 100.0 kHz	<b>9.9993413</b>	0.0121 %	9.990766	10.009234	-0.0066 %	0.0802 %	PASS 4.06 %
10.0 V AC+DC @ 300.0 kHz	<b>9.9972595</b>	0.0336 %	9.966536	10.033464	-0.0274 %	0.3010 %	PASS 4.52 %
10.0 V AC+DC @ 500.0 kHz	<b>10.012161</b>	0.1100 %	9.888900	10.111100	0.1216 %	1.0010 %	PASS 6.04 %
10.0 V AC+DC @ 1.0 MHz	<b>10.108026</b>	0.1700 %	9.882900	10.117100	1.0803 %	1.0010 %	PASS 53.20 %

30 V AC+DC @ 10 Hz	<b>29.998648</b>	0.0060 %	29.991795	30.008205	-0.0045 %	0.0213 %	PASS 10.17 %
30 V AC+DC @ 20 Hz	<b>29.997896</b>	0.0060 %	29.991795	30.008205	-0.0070 %	0.0213 %	PASS 15.82 %
30 V AC+DC @ 40 Hz	<b>29.997733</b>	0.0060 %	29.991795	30.008205	-0.0076 %	0.0213 %	PASS 17.05 %
30 V AC+DC @ 100 Hz	<b>29.997779</b>	0.0060 %	29.991995	30.008005	-0.0074 %	0.0207 %	PASS 17.20 %
30 V AC+DC @ 1.0 kHz	<b>29.998261</b>	0.0060 %	29.991995	30.008005	-0.0058 %	0.0207 %	PASS 13.46 %
30 V AC+DC @ 10.0 kHz	<b>29.999032</b>	0.0060 %	29.991995	30.008005	-0.0032 %	0.0207 %	PASS 7.50 %
30 V AC+DC @ 20.0 kHz	<b>29.999509</b>	0.0060 %	29.991995	30.008005	-0.0016 %	0.0207 %	PASS 3.80 %
30 V AC+DC @ 50.0 kHz	<b>30.001124</b>	0.0060 %	29.987495	30.012505	0.0037 %	0.0357 %	PASS 5.18 %
30 V AC+DC @ 100.0 kHz	<b>30.000949</b>	0.0174 %	29.958591	30.041409	0.0032 %	0.1207 %	PASS 1.30 %
30 V AC+DC @ 300.0 kHz	<b>30.017588</b>	0.0991 %	29.849273	30.150727	0.0586 %	0.4033 %	PASS 7.06 %
30 V AC+DC @ 500.0 kHz	<b>30.073588</b>	0.5200 %	29.393000	30.607000	0.2453 %	1.5033 %	PASS 7.71 %
100.0 V AC+DC @ 10 Hz	<b>100.00216</b>	0.0060 %	99.973582	100.026418	0.0022 %	0.0204 %	PASS 5.08 %
100.0 V AC+DC @ 20 Hz	<b>99.998704</b>	0.0060 %	99.973582	100.026418	-0.0013 %	0.0204 %	PASS 3.05 %
100.0 V AC+DC @ 40 Hz	<b>99.998426</b>	0.0060 %	99.973582	100.026418	-0.0016 %	0.0204 %	PASS 3.70 %
100.0 V AC+DC @ 100 Hz	<b>99.997962</b>	0.0060 %	99.973782	100.026218	-0.0020 %	0.0202 %	PASS 4.84 %
100.0 V AC+DC @ 1.0 kHz	<b>100.00011</b>	0.0060 %	99.973782	100.026218	0.0001 %	0.0202 %	PASS 0.26 %
100.0 V AC+DC @ 10.0 kHz	<b>100.00536</b>	0.0060 %	99.973782	100.026218	0.0054 %	0.0202 %	PASS 12.72 %
100.0 V AC+DC @ 20.0 kHz	<b>100.00728</b>	0.0060 %	99.973782	100.026218	0.0073 %	0.0202 %	PASS 17.27 %
100.0 V AC+DC @ 50.0 kHz	<b>100.01099</b>	0.0095 %	99.955255	100.044745	0.0110 %	0.0352 %	PASS 15.07 %
100.0 V AC+DC @ 100.0 kHz	<b>100.00579</b>	0.0174 %	99.862436	100.137564	0.0058 %	0.1202 %	PASS 2.38 %
300.0 V AC+DC @ 40 Hz	<b>299.94802</b>	0.0079 %	299.074408	300.925592	-0.0173 %	0.3007 %	PASS 2.88 %
300.0 V AC+DC @ 100 Hz	<b>299.94546</b>	0.0079 %	299.854408	300.145592	-0.0182 %	0.0407 %	PASS 21.94 %
300.0 V AC+DC @ 1.0 kHz	<b>299.94898</b>	0.0079 %	299.854408	300.145592	-0.0170 %	0.0407 %	PASS 20.53 %
300.0 V AC+DC @ 10.0 kHz	<b>299.95651</b>	0.0110 %	299.784865	300.215135	-0.0145 %	0.0607 %	PASS 11.76 %
300.0 V AC+DC @ 20.0 kHz	<b>299.96049</b>	0.0110 %	299.784865	300.215135	-0.0132 %	0.0607 %	PASS 10.68 %
300.0 V AC+DC @ 50.0 kHz	<b>300.1381</b>	0.0245 %	299.564599	300.435401	0.0460 %	0.1207 %	PASS 18.69 %
300.0 V AC+DC @ 100.0 kHz	<b>300.60512</b>	0.0660 %	298.900000	301.100000	0.2017 %	0.3007 %	PASS 32.76 %
750.0 V AC+DC @ 40 Hz	<b>749.90135</b>	0.0079 %	747.689020	752.310980	-0.0132 %	0.3003 %	PASS 2.19 %
750.0 V AC+DC @ 100 Hz	<b>749.8994</b>	0.0079 %	749.639020	750.360980	-0.0134 %	0.0403 %	PASS 16.35 %
750.0 V AC+DC @ 1.0 kHz	<b>749.9304</b>	0.0079 %	749.639020	750.360980	-0.0093 %	0.0403 %	PASS 11.31 %
750.0 V AC+DC @ 10.0 kHz	<b>750.02634</b>	0.0110 %	749.465162	750.534838	0.0035 %	0.0603 %	PASS 2.87 %
750.0 V AC+DC @ 20.0 kHz	<b>750.04138</b>	0.0110 %	749.465162	750.534838	0.0055 %	0.0603 %	PASS 4.50 %
750.0 V AC+DC @ 50.0 kHz	<b>750.43617</b>	0.0245 %	748.914498	751.085502	0.0582 %	0.1203 %	PASS 23.69 %
750.0 V AC+DC @ 50.0 kHz	<b>750.43898</b>	0.0660 %	748.603000	751.397000	0.0585 %	0.1203 %	PASS 21.33 %

Procedure for all test points that verify Gain of the DC current DCI function. Both +/-FS points are tested.  
 2-wire connection at LO and DCI is used between DMM and MFC.  
 DCI gain range points verify gain of the DC current function, using corrected 24-hour MFC output.

DCI Test	100nA-1A	DUT	Source unc.	Low Limit	Hi limit	Measured	24h spec	Result
Zero µADC	0	<b>8.5718917E-13</b>						INFO
50 nADC	5E-08	<b>4.9997191E-08</b>						INFO
100 nADC	1E-07	<b>1.0000251E-07</b>	71.82 ppm	9.995282E-08	1.000472E-07	25.059 ppm	400 ppm	PASS 3.08 %
-100 nADC	-1E-07	<b>-9.998873E-08</b>	71.82 ppm	-1.000492E-07	-9.995082E-08	-112.700 ppm	420 ppm	PASS 13.22 %
-50 nADC	-5E-08	<b>-4.999739E-08</b>						INFO
Zero µADC	0	<b>5.7735631E-13</b>						INFO
0.5 µADC	5E-07	<b>4.9989413E-07</b>	71.82 ppm	4.999201E-07	5.000799E-07	-211.737 ppm	88 ppm	PASS 93.20 %
1.0 µADC	1E-06	<b>9.9987296E-07</b>	71.82 ppm	9.998792E-07	1.000121E-06	-127.043 ppm	49 ppm	PASS 73.06 %
-1.0 µADC	-1E-06	<b>-1.0001156E-06</b>	71.82 ppm	-1.000123E-06	-9.998772E-07	115.633 ppm	51 ppm	PASS 65.64 %
-0.5 µADC	-5E-07	<b>-5.0011169E-07</b>	71.82 ppm	-5.000819E-07	-4.999181E-07	223.388 ppm	92 ppm	PASS 95.70 %
Zero 00 µADC	0	<b>8.5622423E-12</b>						INFO
5 µADC	5E-06	<b>5.0000865E-06</b>	71.82 ppm	4.999522E-06	5.000478E-06	17.298 ppm	24 ppm	PASS 11.43 %
10 µADC	1E-05	<b>1.0000064E-05</b>	71.82 ppm	9.999113E-06	1.000089E-05	6.399 ppm	17 ppm	PASS 4.34 %
-10 µADC	-1E-05	<b>-9.9998877E-06</b>	71.82 ppm	-1.000089E-05	-9.999111E-06	-11.225 ppm	17 ppm	PASS 7.60 %
-5 µADC	-5E-06	<b>-4.999929E-06</b>	71.82 ppm	-5.00048E-06	-4.99952E-06	-14.200 ppm	24 ppm	PASS 9.37 %
Zero 000 µADC	0	<b>1.1450632E-11</b>						INFO
50 µADC	5E-05	<b>5.0000567E-05</b>	71.82 ppm	4.999531E-05	5.000469E-05	11.340 ppm	22 ppm	PASS 7.55 %
100 µADC	0.0001	<b>0.00010000059</b>	71.82 ppm	9.999122E-05	0.0001000088	5.888 ppm	16 ppm	PASS 4.00 %
-100 µADC	-0.0001	<b>-9.9999005E-05</b>	71.82 ppm	-0.0001000088	-9.999122E-05	-9.954 ppm	16 ppm	PASS 6.76 %
-50 µADC	-5E-05	<b>-4.9999094E-05</b>	71.82 ppm	-5.000469E-05	-4.999531E-05	-18.115 ppm	22 ppm	PASS 12.06 %
Zero mADC	0	<b>2.3041181E-11</b>						INFO
0.5 mADC	0.0005	<b>0.000499994</b>	33.64 ppm	0.0004999742	0.0005000258	-12.010 ppm	18 ppm	PASS 15.74 %
1.0 mADC	0.001	<b>0.00099999142</b>	33.64 ppm	0.0009999524	0.001000048	-8.584 ppm	14 ppm	PASS 11.78 %
-1.0 mADC	-0.001	<b>-0.0010000017</b>	33.64 ppm	-0.001000048	-0.0009999524	1.732 ppm	14 ppm	PASS 2.38 %
-0.5 mADC	-0.0005	<b>-0.00050000301</b>	33.64 ppm	-0.0005000258	-0.0004999742	6.029 ppm	18 ppm	PASS 7.90 %
Zero 00 mADC	0	<b>4.5477665E-11</b>						INFO
5 mADC	0.005	<b>0.0050001635</b>	32.27 ppm	0.004999749	0.005000251	32.701 ppm	18 ppm	PASS 44.25 %
10 mADC	0.01	<b>0.010000145</b>	32.27 ppm	0.009999537	0.01000046	14.541 ppm	14 ppm	PASS 20.67 %
-10 mADC	-0.01	<b>-0.0099998497</b>	32.27 ppm	-0.01000046	-0.009999537	-15.028 ppm	14 ppm	PASS 21.36 %
-5 mADC	-0.005	<b>-0.0049998366</b>	32.27 ppm	-0.005000251	-0.004999749	-32.680 ppm	18 ppm	PASS 44.22 %
Zero 000 mADC	0	<b>7.880994E-11</b>						INFO
50 mADC	0.05	<b>0.05000101</b>	53.32 ppm	0.04999568	0.05000432	20.203 ppm	33 ppm	PASS 16.11 %
100 mADC	0.1	<b>0.10000191</b>	53.32 ppm	0.09999177	0.1000082	19.114 ppm	29 ppm	PASS 15.75 %
-100 mADC	-0.1	<b>-0.1000008</b>	53.32 ppm	-0.1000082	-0.09999177	8.016 ppm	29 ppm	PASS 6.60 %
-50 mADC	-0.05	<b>-0.049999855</b>	53.32 ppm	-0.05000432	-0.04999568	-2.903 ppm	33 ppm	PASS 2.31 %
Zero ADC	0	<b>1.1150857E-10</b>						INFO
0.5 ADC	0.5	<b>0.50002</b>	115.22 ppm	0.4998824	0.5001176	39.992 ppm	120 ppm	PASS 12.02 %
1.0 ADC	1	<b>1.0000169</b>	115.22 ppm	0.9997748	1.000225	16.936 ppm	110 ppm	PASS 5.32 %
-1.0 ADC	-1	<b>-1.0000172</b>	115.22 ppm	-1.000225	-0.9997748	17.188 ppm	110 ppm	PASS 5.39 %

-0.5 ADC

-0.5

**-0.50001512**

115.22 ppm

-0.5001176

-0.4998824

30.244 ppm

120 ppm

PASS 9.09 %

Procedure for all test points that verify Gain of the AC Current ACI function. Three frequency band points are tested, 50 Hz, 60 Hz and 1 kHz. 2-wire connection at LO and DCI is used between DMM and MFC.

ACI Test	200µA-2A	DUT	Source unc.	Low Limit	Hi limit	Measured	24h spec	Result, % spec
10 µA AC @ 50 Hz	1e-05	<b>1.1536924E-05</b>	0.0160 %	-0.0002900076045	0.0003100076045	15.3692 %	3000.0600 %	INFO
100 µA AC @ 50 Hz	0.0001	<b>0.0001002072</b>	0.0160 %	-0.000200076045	0.000400076045	0.2072 %	300.0600 %	PASS 0.03 %
1.0 mA AC @ 50 Hz	0.001	<b>0.0010010185</b>	0.0160 %	0.00099921955	0.00100078045	1018.476 ppm	0.0620 %	PASS 79.52 %
10 mA AC @ 50 Hz	0.01	<b>0.010001939</b>	0.0160 %	0.0099921955	0.0100078045	193.860 ppm	0.0620 %	PASS 15.14 %
100 mA AC @ 50 Hz	0.1	<b>0.1000136</b>	0.0133 %	0.099924682	0.100075318	135.955 ppm	0.0620 %	PASS 10.72 %
1.0 A AC @ 50 Hz	1.0	<b>1.0002978</b>	0.0133 %	0.99904682	1.00095318	297.811 ppm	0.0820 %	PASS 17.92 %
10 µA AC @ 60 Hz	1e-05	<b>1.1489793E-05</b>	0.0133 %	-0.0002900073318	0.0003100073318	14.8979 %	3000.0600 %	INFO
100 µA AC @ 60 Hz	0.0001	<b>0.00010019832</b>	0.0133 %	-0.000200073318	0.000400073318	0.1983 %	300.0600 %	PASS 0.03 %
1.0 mA AC @ 60 Hz	0.001	<b>0.0010010948</b>	128.64	0.00099925136	0.00100074864	1094.830 ppm	620.0 ppm	PASS 86.45 %
10 mA AC @ 60 Hz	0.01	<b>0.010002125</b>	0.0129 %	0.0099925136	0.0100074864	212.455 ppm	0.0620 %	PASS 16.78 %
100 mA AC @ 60 Hz	0.1	<b>0.10001543</b>	0.0288 %	0.099909182	0.100090818	154.301 ppm	0.0620 %	PASS 11.28 %
1.0 A AC @ 60 Hz	1.0	<b>1.000299</b>	0.0288 %	0.99889182	1.00110818	299.006 ppm	0.0820 %	PASS 17.20 %
10 µA AC @ 1.0 kHz	1e-05	<b>1.1518412E-05</b>	0.0160 %	-0.0002900076045	0.0003100076045	15.1841 %	3000.0600 %	INFO
100 µA AC @ 1.0 kHz	0.0001	<b>0.00010017971</b>	0.0160 %	-0.000200076045	0.000400076045	0.1797 %	300.0600 %	PASS 0.03 %
1.0 mA AC @ 1.0 kHz	0.001	<b>0.0010010615</b>	0.0160 %	0.00099951955	0.00100048045	1061.549 ppm	0.0320 %	FAIL 148.27 %
10 mA AC @ 1.0 kHz	0.01	<b>0.010002485</b>	0.0160 %	0.0099951955	0.0100048045	248.500 ppm	0.0320 %	PASS 34.71 %
100 mA AC @ 1.0 kHz	0.1	<b>0.10001911</b>	0.0133 %	0.099954682	0.100045318	191.123 ppm	0.0320 %	PASS 27.57 %
1.0 A AC @ 1.0 kHz	1.0	<b>1.0002254</b>	0.0133 %	0.99884682	1.00115318	0.0225 %	0.1020 %	PASS 10.96 %

Test date	25 April 2020 17:39
UUT Internal TEMP?	35.5
Destructive overloads?	101, DESTRUCTIVE OVERLOADS valid 2941

Lab temperature maintained +24°C ±2°C

Internal use only

Not validated