

Manufacturer	HEWLETT-PACKARD	Calibration date	September 27 2018
Model Number	3458A	Ambient Temperature	0.00 °C
Serial	5720A-test	Relative Humidity	0.00 %
ID Number	CalCheck	Pressure	0.00
Notes	N/A	Test type	3458B4

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

MFC last calibrated	290.0 days ago	MFC since DCV ZERO	6.0 days ago
MFC since WBFLAT	11226.0 days ago	MFC since WBGAIN	4384.0 days ago
MFC Confidence level	<b>24h 95% REL</b>	MFC Calibrate date	2017-11-12 00:00:00
MFC Calibrate date Zero	Debug	Calibrate date WB Flatness	1988-10-01 00:00:00
Calibrate date WB Gain	Debug	CAL CONST 6.5V reference voltage	6.91960437156
CAL CONST 13V reference voltage	13.8238143596	CAL CONST 22V range positive zero	398.17613
CAL CONST 22V range negative zero	398.17531	CAL CONST DAC Linearity	0.214949572253
CAL CONST 10KOHM true output resistance	9999.91609563	CAL CONST 10KOHM standard resistance	9998.85831309
CAL CONST, Zero calibration temperature	20.2999992371	CAL CONST, All calibration temp	20.2999992371

This note is test MFC dummy text block for further use.  
Calibrator was warmed up >8 hours.

Meter Info	HP3458A	Last calibration date	11/14/2017
CALSTR?	""	Test date	27 September 2018 07:38
DUT Internal TEMP?	43.8	DUT Calibrations number?	41
Self-test result?	Not tested	ACAL ALL result?	Not tested
Firmware	9,2	Options	0,0
CAL? 72	0.983079797	CAL? 1,1	40000.6364
CAL? 2,1	7.07393775	CAL? Res 73	0.982951389
CAL 0 TEMP	40.37	CAL 10V TEMP	39.74
CAL 10KOhm TEMP	39.84	CAL? DCI	0.98203661

Service information

CAL DUMP

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[(1, 40000.6364), (1, 7.07393775), (1, -3.53466184e-07), (1, -1.95143488e-07), (1, -3.47464379e-07), (1, -1.80143995e-07), (1, -2.7735195e-07), (1, -1.74837933e-07), (1, 1.59828026e-05), (1, 1.59828026e-05), (1, 3.05128063e-05), (1, 3.05128063e-05), (1, 0.418441162), (1, 0.416095186), (1, 0.415103405), (1, 0.411556278), (1, 0.406540699), (1, 0.350508546), (1, -0.269740645), (1, -0.299711828), (1, -0.299711828), (1, 0.462783646), (1, 0.459401794), (1, 0.457764382), (1, 0.455520976), (1, 0.454546942), (1, 0.45835733), (1, -0.359654194), (1, 0.389625377), (1, 0.389625377), (1, 0.000144372786), (1, 0.0015657494), (1, 0.00163852842), (1, 0.0170462975), (1, 0.0332719497), (1, 0.350508546), (1, 3.89625377), (1, 3.80634022), (1, 3.80634022), (1, 0.000158562956), (1, 0.00163070357), (1, 0.00171992374), (1, 0.0173642449), (1, 0.0355479786), (1, 0.311563152), (1, 4.10605205), (1, 4.31585033), (1, 4.31585033), (1, 419.0), (1, 41.0), (1, 4.0), (1, 0.0), (1, 0.0), (1, 0.0), (1, 0.0), (1, 0.0), (1, 0.0), (1, 0.0), (1, 40.3741326), (1, 39.7441669), (1, 39.8403962), (1, 90.0), (1, -1.73973807e-11), (1, -1.8946925e-11), (1, -9.81064763e-11), (1, -6.5738286e-10), (1, -4.45971713e-09), (1, -4.481994e-08), (1, -3.94802757e-07), (1, -2.97750216e-06), (1, 0.982761576), (1, 0.983219302), (1, 0.983079797), (1, 0.982951389), (1, 0.982811921), (1, 1.00044142), (1, 1.00015528), (1, 1.00062111), (1, 1.00073678), (1, 1.00010159), (1, 1.00044375), (1, 1.00088415), (1, 1.00088415), (1, 1.00088415), (1, 1.00088415), (1, 1.00044143), (1, 1.0001553), (1, 1.00062113), (1, 1.00073693), (1, 1.00010194), (1, 1.00044375), (1, 1.00088415), (1, 1.00088415), (1, 1.00088415), (1, 1.00088415), (1, 0.98203661), (1, 0.982829837), (1, 0.982948475), (1, 0.985036389), (1, 0.982104559), (1, 0.981084148), (1, 0.981758944), (1, 1.00120397), (1, 93.0), (1, 110.0), (1, 4.93502338), (1, 1.69416556e-11), (1, -2.952305e-12), (1, 9991747.55), (1, -0.00950754836), (1, -0.0277361243), (1, 0.9999999598), (1, 0.999999876), (1, 1666.9969), (1, 1666.9909), (1, 5137.0), (1, 5135.0), (1, 5135.0), (1, 5136.0), (1, 5137.0), (1, 61644.0), (1, 61620.0), (1, 61620.0), (1, 61632.0), (1, 61644.0), (1, 5007.0), (1, 5008.0), (1, 5006.0), (1, 5005.0), (1, 2504.0), (1, 2503.0), (1, 2502.0), (1, 12512.0), (1, 22749.0), (1, 60084.0), (1, 60096.0), (1, 60072.0), (1, 60060.0), (1, 30048.0), (1, 30036.0), (1, 30024.0), (1, 150144.0), (1, 272988.0), (1, 5007.0), (1, 5008.0), (1, 5006.0), (1, 5005.0), (1, 2504.0), (1, 2503.0), (1, 2502.0), (1, 12512.0), (1, 22749.0), (1, 60084.0), (1, 60096.0), (1, 60072.0), (1, 60060.0), (1, 30048.0), (1, 30036.0), (1, 30024.0), (1, 150144.0), (1, 272988.0), (1, 280.0), (1, 280.0), (1, 280.0), (1, 280.0), (1, 280.0), (1, 280.0), (1, 280.0), (1, 280.0), (1, 280.0), (1, 280.0), (1, 3360.0), (1, 3360.0), (1, 3360.0), (1, 3360.0), (1, 3360.0), (1, 3360.0), (1, 3360.0), (1, 3360.0), (1, 38.9887591), (1, 39.0805012), (1, 39.0793797), (1, 108.0), (1, 108.0), (1, 104.0), (1, 104.0), (1, 109.0), (1, 109.0), (1, 98.0), (1, 97.0), (1, 103.0), (1, 103.0), (1, 109.0), (1, 109.0), (1, 107.0), (1, 107.0), (1, 107.0), (1, 107.0), (1, 107.0), (1, 2375.0), (1, 2375.0), (1, 1627.0), (1, 2375.0), (1, 2545.0), (1, 2550.0), (1, 131.0), (1, 127.0), (1, 126.0), (1, 127.0), (1, 126.0), (1, 127.0), (1, 127.0), (1, 127.0), (1, 127.0), (1, -0.00101475143), (1, -0.0121248216), (1, -0.122584594), (1, -1.23168249), (1, -12.0353988), (1, -119.015207), (1, -0.00123181152), (1, -0.0121413853), (1, -0.121999418), (1, -1.19806059), (1, -12.0367637), (1, -118.936086), (1, 1.00181839), (1, 1.00857797), (1, 1.02457454), (1, 1.01405072), (1, 1.00267342), (1, 1.0043434), (1, 216341.754), (1, 10.3701655), (1, 0.98670639), (1, 0.993446045), (1, 1.00920261), (1, 0.998836686), (1, 0.987630082), (1, 0.989275007), (1, 6.39634106e-06), (1, 6.58809203e-05), (1, 0.000658809203), (1, 0.00658809203), (1, 0.0658809203), (1, 0.658809203), (1, 1.02416893), (1, 1.00025558), (1, 1.00022435), (1, 1.00000057), (1, 54.0), (1, 33.0), (1, 33.0), (1, 33.0), (1, 34.0), (1, 46.0), (1, 46.0), (1, 14.0)]
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Destructive overloads?

228, DESTRUCTIVE OVERLOADS valid 2941

Reference

Belden cable long to rear posts

DUT Condition

PreCal

Test procedure : \$Id: hp3458a.py | Rev 930 | 2018/09/26 14:46:00 clu \$

Source procedure : \$Id: f5720a.py | Rev 919 | 2018/09/17 15:43:34 clu \$

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>-0.08 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>-0.12 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>-0.04 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>67.75 µV</b>	0.75 µV	-14.750 µV	14.750 µV	N/A	14.00 µV	FAIL
Short 0000.0 VDC	0.000000E+00	<b>49.64 µV</b>	0.75 µV	-41.750 µV	41.750 µV	N/A	41.00 µV	FAIL
DCV Test	0.1V-1000V	DUT	Source unc.	Low Limit	Hi limit	Measured	24h spec	Result
0.1 VDC (0.10 Range)	0.1000000	<b>0.10000039</b>	7.27 ppm	0.099998723	0.10000128	3.916 ppm	5.50 ppm	PASS 30.67 %
-0.1 VDC (0.10 Range)	-0.1000000	<b>-0.10000036</b>	7.27 ppm	-0.10000128	-0.099998723	3.639 ppm	5.50 ppm	PASS 28.50 %
0.1 VDC (1.00 Range)	0.1000000	<b>0.10000057</b>	7.27 ppm	0.099999093	0.10000091	5.670 ppm	1.80 ppm	PASS 62.51 %
0.2 VDC (1.00 Range)	0.2000000	<b>0.20000121</b>	3.86 ppm	0.19999887	0.20000113	6.047 ppm	1.80 ppm	FAIL 106.84 %
1.0 VDC (1.00 Range)	1.0000000	<b>1.0000045</b>	3.86 ppm	0.99999434	1.0000057	4.478 ppm	1.80 ppm	PASS 79.12 %
-0.1 VDC (1.00 Range)	-0.1000000	<b>-0.10000075</b>	7.27 ppm	-0.10000091	-0.099999093	7.456 ppm	1.80 ppm	PASS 82.21 %
-0.2 VDC (1.00 Range)	-0.2000000	<b>-0.20000136</b>	3.86 ppm	-0.20000113	-0.19999887	6.816 ppm	1.80 ppm	FAIL 120.42 %
-1.0 VDC (1.00 Range)	-1.0000000	<b>-1.0000029</b>	3.86 ppm	-1.0000057	-0.99999434	2.882 ppm	1.80 ppm	PASS 50.92 %
1.0 VDC (10.00 Range)	1.0000000	<b>1.0000055</b>	3.86 ppm	0.99999559	1.0000044	5.525 ppm	0.55 ppm	FAIL 125.28 %
2.0 VDC (10.00 Range)	2.0000000	<b>2.0000104</b>	2.77 ppm	1.9999934	2.0000066	5.186 ppm	0.55 ppm	FAIL 156.19 %
10.0 VDC (10.00 Range)	10.0000000	<b>10.000046</b>	2.73 ppm	9.9999672	10.000033	4.624 ppm	0.55 ppm	FAIL 140.98 %
-1.0 VDC (10.00 Range)	-1.0000000	<b>-1.0000042</b>	3.86 ppm	-1.0000044	-0.99999559	4.168 ppm	0.55 ppm	PASS 94.51 %
-2.0 VDC (10.00 Range)	-2.0000000	<b>-2.0000094</b>	2.77 ppm	-2.0000066	-1.9999934	4.676 ppm	0.55 ppm	FAIL 140.83 %
-10.0 VDC (10.00 Range)	-10.0000000	<b>-10.000046</b>	2.73 ppm	-10.000033	-9.9999672	4.567 ppm	0.55 ppm	FAIL 139.24 %
10 VDC (100.00 Range)	10.0000000	<b>10.000096</b>	2.77 ppm	9.9999443	10.000056	9.551 ppm	2.80 ppm	FAIL 171.46 %
20 VDC (100.00 Range)	20.0000000	<b>20.000098</b>	3.73 ppm	19.999869	20.000131	4.909 ppm	2.80 ppm	PASS 75.18 %
100 VDC (100.00 Range)	100.0000000	<b>100.00019</b>	3.73 ppm	99.999347	100.00065	1.880 ppm	2.80 ppm	PASS 28.79 %
-10 VDC (100.00 Range)	-10.0000000	<b>-9.9999502</b>	2.77 ppm	-10.000056	-9.9999443	-4.978 ppm	2.80 ppm	PASS 89.37 %
-20 VDC (100.00 Range)	-20.0000000	<b>-19.999968</b>	3.73 ppm	-20.000131	-19.999869	-1.596 ppm	2.80 ppm	PASS 24.43 %
-100 VDC (100.00 Range)	-100.0000000	<b>-100.00009</b>	3.73 ppm	-100.00065	-99.999347	0.924 ppm	2.80 ppm	PASS 14.15 %
100 VDC (1000.00 Range)	100.0000000	<b>100.00028</b>	3.73 ppm	99.999367	100.00063	2.845 ppm	2.60 ppm	PASS 44.94 %
200 VDC (1000.00 Range)	200.0000000	<b>200.0004</b>	3.73 ppm	199.99873	200.00127	1.990 ppm	2.60 ppm	PASS 31.43 %
1000 VDC (1000.00 Range)	1000.0000000	<b>1000.0035</b>	5.45 ppm	999.97995	1000.02	3.543 ppm	2.60 ppm	PASS 17.67 %
-100 VDC (1000.00 Range)	-100.0000000	<b>-100.00027</b>	3.73 ppm	-100.00063	-99.999367	2.680 ppm	2.60 ppm	PASS 42.34 %
-200 VDC (1000.00 Range)	-200.0000000	<b>-200.00033</b>	3.73 ppm	-200.00127	-199.99873	1.644 ppm	2.60 ppm	PASS 25.98 %
-1000 VDC (1000.00 Range)	-1000.0000000	<b>-1000.0034</b>	5.45 ppm	-1000.02	-999.97995	3.364 ppm	2.60 ppm	PASS 85.16 %

Additional test for **combined DUT+MFC** DC Voltage Integral Linearity (INL) using fixed 10V range. Integral linearity is a measure of the device's deviation from ideal linear behaviour.

DCV Linearity	1V Range	DUT	Source unc.	Low Limit	Hi limit	Measured	24h spec	Result
1.0999999	1.0999999	<b>1.1000051</b>	2.73 ppm	1.099996	1.100004	4.71 ppm	0.55 ppm	<b>FAIL</b> 143.72 %
0.9999999	0.9999999	<b>1.0000046</b>	2.73 ppm	0.9999966	1.000003	4.68 ppm	0.55 ppm	<b>FAIL</b> 142.76 %
0.9000000	0.9000000	<b>0.9000042</b>	2.73 ppm	0.899997	0.900003	4.71 ppm	0.55 ppm	<b>FAIL</b> 143.50 %
0.8888888	0.8888888	<b>0.8888930</b>	2.73 ppm	0.8888859	0.8888917	4.69 ppm	0.55 ppm	<b>FAIL</b> 142.98 %
0.8000000	0.8000000	<b>0.8000038</b>	2.73 ppm	0.7999974	0.8000026	4.71 ppm	0.55 ppm	<b>FAIL</b> 143.58 %
0.7777777	0.7777777	<b>0.7777814</b>	2.73 ppm	0.7777751	0.7777803	4.73 ppm	0.55 ppm	<b>FAIL</b> 144.22 %
0.7000000	0.7000000	<b>0.7000034</b>	2.73 ppm	0.6999977	0.7000023	4.90 ppm	0.55 ppm	<b>FAIL</b> 149.38 %
0.6666666	0.6666666	<b>0.6666699</b>	2.73 ppm	0.6666644	0.6666688	4.91 ppm	0.55 ppm	<b>FAIL</b> 149.55 %
0.6000000	0.6000000	<b>0.6000030</b>	2.73 ppm	0.599998	0.600002	5.00 ppm	0.55 ppm	<b>FAIL</b> 152.39 %
0.5555555	0.5555555	<b>0.5555583</b>	2.73 ppm	0.5555537	0.5555573	5.11 ppm	0.55 ppm	<b>FAIL</b> 155.72 %
0.5000000	0.5000000	<b>0.5000027</b>	2.73 ppm	0.4999984	0.5000016	5.43 ppm	0.55 ppm	<b>FAIL</b> 165.70 %
0.4444444	0.4444444	<b>0.4444469</b>	2.73 ppm	0.4444429	0.4444459	5.70 ppm	0.55 ppm	<b>FAIL</b> 173.71 %
0.4000000	0.4000000	<b>0.4000023</b>	2.73 ppm	0.3999987	0.4000013	5.70 ppm	0.55 ppm	<b>FAIL</b> 173.74 %
0.3333333	0.3333333	<b>0.3333353</b>	2.73 ppm	0.3333322	0.3333344	6.07 ppm	0.55 ppm	<b>FAIL</b> 185.17 %
0.3000000	0.3000000	<b>0.3000018</b>	2.73 ppm	0.299999	0.300001	6.15 ppm	0.55 ppm	<b>FAIL</b> 187.60 %
0.2222222	0.2222222	<b>0.2222238</b>	2.73 ppm	0.2222215	0.2222229	7.02 ppm	0.55 ppm	<b>FAIL</b> 213.91 %
0.2000000	0.2000000	<b>0.2000015</b>	2.73 ppm	0.1999993	0.2000007	7.58 ppm	0.55 ppm	<b>FAIL</b> 231.23 %
0.1234567	0.1234567	<b>0.1234580</b>	2.73 ppm	0.1234563	0.1234571	10.16 ppm	0.55 ppm	<b>FAIL</b> 309.66 %
0.1111111	0.1111111	<b>0.1111123</b>	2.73 ppm	0.1111107	0.1111115	10.86 ppm	0.55 ppm	<b>FAIL</b> 331.22 %
0.1000000	0.1000000	<b>0.1000012</b>	2.73 ppm	0.09999967	0.1000003	12.25 ppm	0.55 ppm	<b>FAIL</b> 373.46 %
0.0987654	0.0987654	<b>0.0987666</b>	3.86 ppm	0.09876496	0.09876584	11.83 ppm	0.55 ppm	<b>FAIL</b> 268.20 %
0.0111111	0.0111111	<b>0.0111120</b>	7.27 ppm	0.01111101	0.01111119	82.83 ppm	0.55 ppm	<b>FAIL</b> 1059.16 %
-0.0111111	-0.0111111	<b>-0.0111105</b>	7.27 ppm	-0.01111119	-0.01111101	-56.40 ppm	0.55 ppm	<b>FAIL</b> 721.27 %
-0.0987654	-0.0987654	<b>-0.09876502</b>	3.86 ppm	-0.09876584	-0.09876496	-3.87 ppm	0.55 ppm	<b>PASS</b> 87.81 %
-0.1000000	-0.1000000	<b>-0.09999968</b>	2.73 ppm	-0.1000003	-0.09999967	-3.21 ppm	0.55 ppm	<b>PASS</b> 97.96 %
-0.1111111	-0.1111111	<b>-0.1111108</b>	2.73 ppm	-0.1111115	-0.1111107	-2.55 ppm	0.55 ppm	<b>PASS</b> 77.64 %
-0.1234567	-0.1234567	<b>-0.1234564</b>	2.73 ppm	-0.1234571	-0.1234563	-2.10 ppm	0.55 ppm	<b>PASS</b> 64.07 %
-0.2000000	-0.2000000	<b>-0.2000000</b>	2.73 ppm	-0.2000007	-0.1999993	-0.06 ppm	0.55 ppm	<b>PASS</b> 1.93 %
-0.2222222	-0.2222222	<b>-0.2222223</b>	2.73 ppm	-0.2222229	-0.2222215	0.53 ppm	0.55 ppm	<b>PASS</b> 16.20 %
-0.3000000	-0.3000000	<b>-0.3000003</b>	2.73 ppm	-0.300001	-0.299999	1.14 ppm	0.55 ppm	<b>PASS</b> 34.61 %
-0.3333333	-0.3333333	<b>-0.3333337</b>	2.73 ppm	-0.3333344	-0.3333322	1.35 ppm	0.55 ppm	<b>PASS</b> 41.08 %
-0.4000000	-0.4000000	<b>-0.4000007</b>	2.73 ppm	-0.4000013	-0.3999987	1.72 ppm	0.55 ppm	<b>PASS</b> 52.49 %
-0.4444444	-0.4444444	<b>-0.4444453</b>	2.73 ppm	-0.4444459	-0.4444429	1.94 ppm	0.55 ppm	<b>PASS</b> 59.27 %
-0.5000000	-0.5000000	<b>-0.5000011</b>	2.73 ppm	-0.5000016	-0.4999984	2.10 ppm	0.55 ppm	<b>PASS</b> 64.11 %
-0.5555555	-0.5555555	<b>-0.5555568</b>	2.73 ppm	-0.5555573	-0.5555537	2.30 ppm	0.55 ppm	<b>PASS</b> 70.15 %
-0.6000000	-0.6000000	<b>-0.6000015</b>	2.73 ppm	-0.600002	-0.599998	2.50 ppm	0.55 ppm	<b>PASS</b> 76.13 %
-0.6666666	-0.6666666	<b>-0.6666683</b>	2.73 ppm	-0.6666688	-0.6666644	2.49 ppm	0.55 ppm	<b>PASS</b> 75.86 %
-0.7000000	-0.7000000	<b>-0.7000018</b>	2.73 ppm	-0.7000023	-0.6999977	2.51 ppm	0.55 ppm	<b>PASS</b> 76.50 %
-0.7777777	-0.7777777	<b>-0.77777977</b>	2.73 ppm	-0.7777803	-0.7777751	2.67 ppm	0.55 ppm	<b>PASS</b> 81.32 %
-0.8000000	-0.8000000	<b>-0.80000217</b>	2.73 ppm	-0.8000026	-0.7999974	2.71 ppm	0.55 ppm	<b>PASS</b> 82.71 %
-0.8888888	-0.8888888	<b>-0.88889121</b>	2.73 ppm	-0.8888917	-0.8888859	2.71 ppm	0.55 ppm	<b>PASS</b> 82.53 %
-0.9000000	-0.9000000	<b>-0.90000241</b>	2.73 ppm	-0.900003	-0.899997	2.68 ppm	0.55 ppm	<b>PASS</b> 81.70 %
-0.9999999	-0.9999999	<b>-1.00000278</b>	2.73 ppm	-1.000003	-0.9999966	2.88 ppm	0.55 ppm	<b>PASS</b> 87.94 %
-1.0999999	-1.0999999	<b>-1.10000317</b>	2.73 ppm	-1.100004	-1.099996	2.98 ppm	0.55 ppm	<b>PASS</b> 90.74 %
DCV Linearity	10V Range	DUT	Source unc.	Low Limit	Hi limit	Measured	24h spec	Result
10.999999	10.999999	<b>11.00003014</b>	2.73 ppm	10.99996	11.00004	2.83 ppm	0.55 ppm	<b>PASS</b> 86.31 %
10.101010	10.101010	<b>10.10103839</b>	2.73 ppm	10.10098	10.10104	2.81 ppm	0.55 ppm	<b>PASS</b> 85.69 %
10.000000	10.000000	<b>10.00002846</b>	2.73 ppm	9.999967	10.00003	2.85 ppm	0.55 ppm	<b>PASS</b> 86.77 %
9.999999	9.999999	<b>10.00002721</b>	2.73 ppm	9.999966	10.00003	2.82 ppm	0.55 ppm	<b>PASS</b> 86.01 %
9.000000	9.000000	<b>9.00002558</b>	2.73 ppm	8.99997	9.00003	2.84 ppm	0.55 ppm	<b>PASS</b> 86.65 %
8.888888	8.888888	<b>8.88891239</b>	2.73 ppm	8.888859	8.888917	2.74 ppm	0.55 ppm	<b>PASS</b> 83.64 %
8.000000	8.000000	<b>8.00002282</b>	2.73 ppm	7.999974	8.000026	2.85 ppm	0.55 ppm	<b>PASS</b> 86.98 %
7.777777	7.777777	<b>7.77779971</b>	2.73 ppm	7.777751	7.777803	2.92 ppm	0.55 ppm	<b>PASS</b> 89.02 %
7.000000	7.000000	<b>7.00002030</b>	2.73 ppm	6.999977	7.000023	2.90 ppm	0.55 ppm	<b>PASS</b> 88.43 %
6.666666	6.666666	<b>6.66668496</b>	2.73 ppm	6.666644	6.666688	2.84 ppm	0.55 ppm	<b>PASS</b> 86.72 %
6.000000	6.000000	<b>6.00001739</b>	2.73 ppm	5.99998	6.00002	2.90 ppm	0.55 ppm	<b>PASS</b> 88.36 %
5.555555	5.555555	<b>5.55557124</b>	2.73 ppm	5.555537	5.555573	2.92 ppm	0.55 ppm	<b>PASS</b> 89.11 %
5.000000	5.000000	<b>5.00001468</b>	2.73 ppm	4.999984	5.000016	2.94 ppm	0.55 ppm	<b>PASS</b> 89.51 %
4.444444	4.444444	<b>4.44445704</b>	2.73 ppm	4.444429	4.444459	2.93 ppm	0.55 ppm	<b>PASS</b> 89.47 %
4.000000	4.000000	<b>4.00001175</b>	2.73 ppm	3.999987	4.000013	2.94 ppm	0.55 ppm	<b>PASS</b> 89.57 %
3.333333	3.333333	<b>3.33334300</b>	2.73 ppm	3.333322	3.333344	3.00 ppm	0.55 ppm	<b>PASS</b> 91.43 %
3.000000	3.000000	<b>3.00000906</b>	2.73 ppm	2.99999	3.00001	3.02 ppm	0.55 ppm	<b>PASS</b> 92.03 %
2.222222	2.222222	<b>2.22222904</b>	2.73 ppm	2.222215	2.222229	3.17 ppm	0.55 ppm	<b>PASS</b> 96.53 %
2.000000	2.000000	<b>2.00000637</b>	2.73 ppm	1.999993	2.000007	3.19 ppm	0.55 ppm	<b>PASS</b> 97.18 %
1.111111	1.111111	<b>1.1111150</b>	2.73 ppm	1.111107	1.111115	3.60 ppm	0.55 ppm	<b>FAIL</b> 109.84 %
1.000000	1.000000	<b>1.00000377</b>	3.86 ppm	0.9999956	1.000004	3.77 ppm	0.55 ppm	<b>PASS</b> 85.44 %
0.555555	0.555555	<b>0.5555574</b>	7.27 ppm	0.5555507	0.5555593	4.23 ppm	0.55 ppm	<b>PASS</b> 54.12 %
-0.555555	-0.555555	<b>-0.5555563</b>	7.27 ppm	-0.5555593	-0.5555507	2.30 ppm	0.55 ppm	<b>PASS</b> 29.46 %

-1.000000	-1.000000	-1.0000027	3.86 ppm	-1.000004	-0.9999956	2.70 ppm	0.55 ppm	PASS 61.13 %
-1.111111	-1.111111	-1.1111138	2.73 ppm	-1.111115	-1.111107	2.55 ppm	0.55 ppm	PASS 77.84 %
-2.000000	-2.000000	-2.00000536	2.73 ppm	-2.000007	-1.999993	2.68 ppm	0.55 ppm	PASS 81.75 %
-2.222222	-2.222222	-2.22222799	2.73 ppm	-2.222229	-2.222215	2.70 ppm	0.55 ppm	PASS 82.23 %
-3.000000	-3.000000	-3.00000797	2.73 ppm	-3.00001	-2.99999	2.66 ppm	0.55 ppm	PASS 81.00 %
-3.333333	-3.333333	-3.33334200	2.73 ppm	-3.333344	-3.333322	2.70 ppm	0.55 ppm	PASS 82.29 %
-4.000000	-4.000000	-4.00001067	2.73 ppm	-4.000013	-3.999987	2.67 ppm	0.55 ppm	PASS 81.35 %
-4.444444	-4.444444	-4.4444557	2.73 ppm	-4.444459	-4.444429	2.62 ppm	0.55 ppm	PASS 79.97 %
-5.000000	-5.000000	-5.00001329	2.73 ppm	-5.000016	-4.999984	2.66 ppm	0.55 ppm	PASS 81.07 %
-5.555555	-5.555555	-5.55556960	2.73 ppm	-5.555573	-5.555537	2.63 ppm	0.55 ppm	PASS 80.10 %
-6.000000	-6.000000	-6.00001585	2.73 ppm	-6.00002	-5.99998	2.64 ppm	0.55 ppm	PASS 80.55 %
-6.666666	-6.666666	-6.66668358	2.73 ppm	-6.666688	-6.666644	2.64 ppm	0.55 ppm	PASS 80.42 %
-7.000000	-7.000000	-7.00001844	2.73 ppm	-7.000023	-6.999977	2.63 ppm	0.55 ppm	PASS 80.30 %
-7.777777	-7.777777	-7.77779809	2.73 ppm	-7.777803	-7.777751	2.71 ppm	0.55 ppm	PASS 82.68 %
-8.000000	-8.000000	-8.0000209	2.73 ppm	-8.000026	-7.999974	2.62 ppm	0.55 ppm	PASS 79.76 %
-8.888888	-8.888888	-8.88891198	2.73 ppm	-8.888917	-8.888859	2.70 ppm	0.55 ppm	PASS 82.25 %
-9.000000	-9.000000	-9.00002417	2.73 ppm	-9.00003	-8.99997	2.69 ppm	0.55 ppm	PASS 81.88 %
-9.999999	-9.999999	-10.00002560	2.73 ppm	-10.00003	-9.999966	2.66 ppm	0.55 ppm	PASS 81.10 %
-10.000000	-10.000000	-10.00002674	2.73 ppm	-10.00003	-9.999967	2.67 ppm	0.55 ppm	PASS 81.52 %
-10.101010	-10.101010	-10.10103779	2.73 ppm	-10.10104	-10.10098	2.75 ppm	0.55 ppm	PASS 83.89 %
-10.999999	-10.999999	-11.00002888	2.73 ppm	-11.00004	-10.99996	2.72 ppm	0.55 ppm	PASS 82.82 %
DCV Linearity	100V Range	DUT	Source unc.	Low Limit	Hi limit	Measured	24h spec	Result
100.99999	100.99999	101.0003005	2.73 ppm	100.99966	101.00032	3.07 ppm	0.55 ppm	PASS 68.45 %
100.10101	100.10101	100.1012963	2.73 ppm	100.10068	100.10134	2.86 ppm	0.55 ppm	PASS 63.84 %
100.00000	100.00000	100.0002761	2.73 ppm	99.999672	100.00033	2.76 ppm	0.55 ppm	PASS 61.63 %
99.99999	99.99999	100.0002615	2.73 ppm	99.999662	100.00032	2.72 ppm	0.55 ppm	PASS 60.60 %
90.00000	90.00000	90.00024734	2.73 ppm	89.999705	90.000295	2.75 ppm	0.55 ppm	PASS 83.79 %
88.88888	88.88888	88.88912172	2.73 ppm	88.888588	88.889172	2.72 ppm	0.55 ppm	PASS 82.91 %
80.00000	80.00000	80.00022366	2.73 ppm	79.999738	80.000262	2.80 ppm	0.55 ppm	PASS 85.24 %
77.77777	77.77777	77.77799017	2.73 ppm	77.777515	77.778025	2.83 ppm	0.55 ppm	PASS 86.30 %
70.00000	70.00000	70.00019976	2.73 ppm	69.99977	70.00023	2.85 ppm	0.55 ppm	PASS 87.00 %
66.66666	66.66666	66.66685298	2.73 ppm	66.666441	66.666879	2.89 ppm	0.55 ppm	PASS 88.26 %
60.00000	60.00000	60.00017666	2.73 ppm	59.999803	60.000197	2.94 ppm	0.55 ppm	PASS 89.77 %
55.55555	55.55555	55.55571405	2.73 ppm	55.555368	55.555732	2.95 ppm	0.55 ppm	PASS 90.03 %
50.00000	50.00000	50.00015181	2.73 ppm	49.999836	50.000164	3.04 ppm	0.55 ppm	PASS 92.57 %
44.44444	44.44444	44.44457403	2.73 ppm	44.444294	44.444586	3.02 ppm	0.55 ppm	PASS 91.94 %
40.00000	40.00000	40.00012222	2.73 ppm	39.999869	40.000131	3.06 ppm	0.55 ppm	PASS 93.15 %
33.33333	33.33333	33.33343260	2.73 ppm	33.333221	33.333439	3.08 ppm	0.55 ppm	PASS 93.85 %
30.00000	30.00000	30.00009452	2.73 ppm	29.999902	30.000098	3.15 ppm	0.55 ppm	PASS 96.06 %
22.22222	22.22222	22.22229163	2.73 ppm	22.222147	22.222293	3.22 ppm	0.55 ppm	PASS 98.27 %
20.00000	20.00000	20.0000696	2.73 ppm	19.999934	20.000066	3.48 ppm	0.55 ppm	FAIL 106.08 %
11.11111	11.11111	11.1111502	2.73 ppm	11.111075	11.111147	3.53 ppm	0.55 ppm	FAIL 107.59 %
10.00000	10.00000	10.00003598	3.86 ppm	9.9999559	10.000044	3.60 ppm	0.55 ppm	PASS 81.59 %
9.87654	9.87654	9.8765772	7.27 ppm	9.8764658	9.8766202	3.46 ppm	0.55 ppm	PASS 44.27 %
-9.87654	-9.87654	-9.8765793	7.27 ppm	-9.8766202	-9.8764658	3.68 ppm	0.55 ppm	PASS 47.01 %
-10.00000	-10.00000	-10.00003657	3.86 ppm	-10.000044	-9.9999559	3.66 ppm	0.55 ppm	PASS 82.93 %
-11.11111	-11.11111	-11.1111495	2.73 ppm	-11.111147	-11.111075	3.46 ppm	0.55 ppm	FAIL 105.60 %
-20.00000	-20.00000	-20.0000663	2.73 ppm	-20.000066	-19.999934	3.32 ppm	0.55 ppm	FAIL 101.08 %
-22.22222	-22.22222	-22.2222935	2.73 ppm	-22.222293	-22.222147	3.31 ppm	0.55 ppm	FAIL 100.78 %
-30.00000	-30.00000	-30.00009364	2.73 ppm	-30.000098	-29.999902	3.12 ppm	0.55 ppm	PASS 95.17 %
-33.33333	-33.33333	-33.33343298	2.73 ppm	-33.333439	-33.333221	3.09 ppm	0.55 ppm	PASS 94.18 %
-40.00000	-40.00000	-40.00012426	2.73 ppm	-40.000131	-39.999869	3.11 ppm	0.55 ppm	PASS 94.71 %
-44.44444	-44.44444	-44.44457636	2.73 ppm	-44.444586	-44.444294	3.07 ppm	0.55 ppm	PASS 93.54 %
-50.00000	-50.00000	-50.00015371	2.73 ppm	-50.000164	-49.999836	3.07 ppm	0.55 ppm	PASS 93.73 %
-55.55555	-55.55555	-55.55571923	2.73 ppm	-55.555732	-55.555368	3.05 ppm	0.55 ppm	PASS 92.87 %
-60.00000	-60.00000	-60.00017309	2.73 ppm	-60.000197	-59.999803	2.88 ppm	0.55 ppm	PASS 87.95 %
-66.66666	-66.66666	-66.66685029	2.73 ppm	-66.666879	-66.666441	2.85 ppm	0.55 ppm	PASS 87.02 %
-70.00000	-70.00000	-70.00019896	2.73 ppm	-70.00023	-69.99977	2.84 ppm	0.55 ppm	PASS 86.66 %
-77.77777	-77.77777	-77.77798739	2.73 ppm	-77.778025	-77.777515	2.80 ppm	0.55 ppm	PASS 85.22 %
-80.00000	-80.00000	-80.00021666	2.73 ppm	-80.000262	-79.999738	2.71 ppm	0.55 ppm	PASS 82.57 %
-88.88888	-88.88888	-88.88911384	2.73 ppm	-88.889172	-88.888588	2.63 ppm	0.55 ppm	PASS 80.21 %
-90.00000	-90.00000	-90.00023873	2.73 ppm	-90.000295	-89.999705	2.65 ppm	0.55 ppm	PASS 80.87 %
-99.99999	-99.99999	-100.0002523	2.73 ppm	-100.00032	-99.999662	2.62 ppm	0.55 ppm	FAIL 126.13 %
-100.00000	-100.00000	-100.0002621	2.73 ppm	-100.00033	-99.999672	2.62 ppm	0.55 ppm	FAIL 126.03 %
-100.10101	-100.10101	-100.1012674	2.73 ppm	-100.10134	-100.10068	2.57 ppm	0.55 ppm	FAIL 123.72 %
-100.99999	-100.99999	-101.0002497	2.73 ppm	-101.00032	-100.99966	2.57 ppm	0.55 ppm	FAIL 124.31 %

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	1 Ohm to 1 GOhm	DUT	Source unc.	Low Limit	Hi limit	Measured	24h spec	Result
1 Ω	0.9999951	<b>0.99998005</b>	32.0 ppm	9.9995510E-01	1.0000351E+00	-15.045 ppm	8.0 ppm	PASS 37.61 %
1.9 Ω	1.8995806	<b>1.8994937</b>	25.0 ppm	1.8995179E+00	1.8996433E+00	-45.737 ppm	8.0 ppm	FAIL 138.60 %
10 Ω	9.999534	<b>9.9993966</b>	5.0 ppm	9.9994040E+00	9.9996640E+00	-13.743 ppm	8.0 ppm	FAIL 105.71 %
19 Ω	19.000082	<b>18.999938</b>	4.0 ppm	1.8999892E+01	1.9000272E+01	-7.578 ppm	6.0 ppm	PASS 75.78 %
100 Ω	99.99773	<b>99.997356</b>	1.7 ppm	9.9996960E+01	9.9998500E+01	-3.744 ppm	6.0 ppm	PASS 48.62 %
190 Ω	190.00159	<b>190.00133</b>	1.7 ppm	1.9000085E+02	1.9000233E+02	-1.371 ppm	2.2 ppm	PASS 35.14 %
1.0 kΩ	1000.0208	<b>1000.021</b>	1.7 ppm	1.0000169E+03	1.0000247E+03	0.177 ppm	2.2 ppm	PASS 4.55 %
1.9 kΩ	1900.036	<b>1900.0429</b>	1.7 ppm	1.9000286E+03	1.9000434E+03	3.645 ppm	2.2 ppm	PASS 93.46 %
10 kΩ	9999.916	<b>9999.95</b>	1.6 ppm	9.9998780E+03	9.9999540E+03	3.396 ppm	2.2 ppm	PASS 89.38 %
19 kΩ	19000.292	<b>19000.391</b>	1.7 ppm	1.9000218E+04	1.9000366E+04	5.232 ppm	2.2 ppm	FAIL 134.15 %
100 kΩ	99998.81	<b>99999.212</b>	2.0 ppm	9.9998390E+04	9.9999230E+04	4.019 ppm	2.2 ppm	PASS 95.70 %
190 kΩ	189999.8	<b>190001.37</b>	2.0 ppm	1.8999733E+05	1.9000227E+05	8.256 ppm	11.0 ppm	PASS 63.51 %
1.0 MΩ	999970	<b>999976.62</b>	2.5 ppm	9.9995650E+05	9.9998350E+05	6.618 ppm	11.0 ppm	PASS 49.02 %
1.9 MΩ	1900005.6	<b>1900123.6</b>	3.0 ppm	1.8998954E+06	1.9001158E+06	62.102 ppm	55.0 ppm	FAIL 107.07 %
10 MΩ	9998755	<b>9999214</b>	10.0 ppm	9.9981051E+06	9.9994049E+06	45.903 ppm	55.0 ppm	PASS 70.62 %
19 MΩ	18999451	<b>19001336</b>	20.0 ppm	1.8989381E+07	1.9009521E+07	99.197 ppm	510.0 ppm	PASS 18.72 %
100 MΩ	99998610	<b>1.0001394E+08</b>	50.0 ppm	9.9942611E+07	1.0005461E+08	153.332 ppm	510.0 ppm	PASS 27.38 %
1 GΩ STD	9.9751672E+08	<b>1.0000000E+09</b>	30000.0 ppm	962593659.633	1032439780.37	2489.462 ppm	5010.00 ppm	PASS 7.11 %

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 0.0000050 Ω	5.000e-05 Ω	-5e-05	5e-05	N/A	8.0000e-06 Ω	PASS
100 Ω	Range -0.0000093 Ω	5.500e-04 Ω	-0.00055	0.00055	N/A	2.2000e-06 Ω	PASS
1.0 kΩ	Range 0.0000240 Ω	5.500e-03 Ω	-0.0055	0.0055	N/A	2.2000e-06 Ω	PASS
10 kΩ	Range 0.0000450 Ω	5.500e-02 Ω	-0.055	0.055	N/A	2.2000e-06 Ω	PASS
100 kΩ	Range 0.0020963 Ω	5.500e-01 Ω	-0.55	0.55	N/A	2.2000e-06 Ω	PASS
1.0 MΩ	Range -0.0449370 Ω	5.500e+00 Ω	-5.5	5.5	N/A	2.2000e-06 Ω	PASS
10 MΩ	Range -0.9291067 Ω	5.500e+01 Ω	-55	55	N/A	2.2000e-06 Ω	PASS
100 MΩ	Range -1.1389048 Ω	5.500e+02 Ω	-550	550	N/A	2.2000e-06 Ω	PASS
1 GΩ	Range -1.1988472 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 0.1199025 Ω	3.000e-01 Ω	-0.3	0.3	N/A	8.0000e-06 Ω	PASS
100 Ω	Range 0.1209185 Ω	3.500e-01 Ω	-0.35	0.35	N/A	2.2000e-06 Ω	PASS
1.0 kΩ	Range 0.1209155 Ω	4.000e-01 Ω	-0.4	0.4	N/A	2.2000e-06 Ω	PASS
10 kΩ	Range 0.1235079 Ω	4.000e-01 Ω	-0.4	0.4	N/A	2.2000e-06 Ω	PASS
100 kΩ	Range 0.1185928 Ω	5.500e-01 Ω	-0.55	0.55	N/A	2.2000e-06 Ω	PASS
1.0 MΩ	Range 0.2396630 Ω	5.500e+00 Ω	-5.5	5.5	N/A	2.2000e-06 Ω	PASS
10 MΩ	Range 1.6183900 Ω	5.500e+01 Ω	-55	55	N/A	2.2000e-06 Ω	PASS
100 MΩ	Range 1.5284797 Ω	5.500e+02 Ω	-550	550	N/A	2.2000e-06 Ω	PASS
1 GΩ	Range 1.6483605 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 ANAlog mode. 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 ANA Test	1V-10V	DUT	w/Guardband	Low Limit	Hi limit	Units	Measured	24h spec	Result
1.0 VAC @ 50.0 kHz	1.0	<b>0.99995254</b>	129.09	0.99955091	1.00044909	VAC	-47.458 ppm	320.0 ppm	PASS 10.57 %
1.0 VAC @ 1.0 MHz	1.0	<b>1.0165469</b>	0.2500 %	0.9874	1.0126	VAC	1.6547 %	1.0100 %	FAIL 131.32 %
10 VAC @ 40 Hz	10	<b>9.9998569</b>	0.0073 %	9.8982682	10.1017318	VAC	-0.0014 %	1.0100 %	PASS 0.14 %
10 VAC @ 200 Hz	10	<b>10.000261</b>	73.18	9.9983682	10.0016318	VAC	26.106 ppm	90.0 ppm	PASS 16.00 %
10 VAC @ 500 Hz	10	<b>10.000209</b>	73.18	9.9983682	10.0016318	VAC	20.945 ppm	90.0 ppm	PASS 12.84 %
10 VAC @ 50.0 kHz	10	<b>9.9983864</b>	129.09	9.9955091	10.0044909	VAC	-161.362 ppm	320.0 ppm	PASS 35.93 %
10 VAC @ 1.0 MHz	10	<b>10.160131</b>	0.3000 %	9.869	10.131	VAC	1.6013 %	1.0100 %	FAIL 122.24 %



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	0.0099980868	312.27	0.009991	0.010009	-191.318 ppm	600.0 ppm	PASS 20.97 %
0.01 V AC+DC @ 20 Hz	0.0099973802	312.27	0.009991	0.010009	-261.975 ppm	600.0 ppm	PASS 28.72 %
0.01 V AC+DC @ 40 Hz	0.0099970584	312.27	0.009991	0.010009	-294.158 ppm	600.0 ppm	PASS 32.24 %
0.01 V AC+DC @ 100 Hz	0.0099983186	312.27	0.009994	0.010006	-168.141 ppm	310.0 ppm	PASS 27.02 %
0.01 V AC+DC @ 1.0 kHz	0.0099967329	312.27	0.009994	0.010006	-326.709 ppm	310.0 ppm	PASS 52.50 %
0.01 V AC+DC @ 10.0 kHz	0.009996337	312.27	0.009993	0.010007	-366.301 ppm	410.0 ppm	PASS 50.72 %
0.01 V AC+DC @ 20.0 kHz	0.0099946049	312.27	0.009993	0.010007	-539.509 ppm	410.0 ppm	PASS 74.70 %
0.01 V AC+DC @ 50.0 kHz	0.0099937201	0.0312 %	0.009986	0.010014	-0.0628 %	0.1110 %	PASS 44.15 %
0.01 V AC+DC @ 100.0 kHz	0.0099701931	0.0312 %	0.009946	0.010054	-0.2981 %	0.5110 %	PASS 54.97 %
0.01 V AC+DC @ 300.0 kHz	0.010446603	0.0447 %	0.009594	0.010406	4.4660 %	4.0200 %	FAIL 109.87 %
0.01 V AC+DC @ 500.0 kHz	0.0096349954	0.0773 %	0.006787	0.013213	-3.6500 %	32.0500 %	PASS 11.36 %
0.01 V AC+DC @ 1.0 MHz	0.0087178098	0.1500 %	0.006780	0.013220	-12.8219 %	32.0500 %	PASS 39.82 %
0.1 V AC+DC @ 10 Hz	0.099996273	1500	0.099839	0.100161	-37.265 ppm	110.0 ppm	PASS 2.31 %
0.1 V AC+DC @ 20 Hz	0.099992739	2500	0.099739	0.100261	-72.613 ppm	110.0 ppm	PASS 2.78 %
0.1 V AC+DC @ 40 Hz	0.099991927	4000	0.099589	0.100411	-80.729 ppm	110.0 ppm	PASS 1.96 %
0.1 V AC+DC @ 100 Hz	0.099991836	121.36	0.099979	0.100021	-81.642 ppm	90.0 ppm	PASS 38.63 %
0.1 V AC+DC @ 1.0 kHz	0.099991179	121.36	0.099979	0.100021	-88.208 ppm	90.0 ppm	PASS 41.73 %
0.1 V AC+DC @ 10.0 kHz	0.09998827	121.36	0.099972	0.100028	-117.304 ppm	160.0 ppm	PASS 41.69 %
0.1 V AC+DC @ 20.0 kHz	0.099984383	121.36	0.099972	0.100028	-156.173 ppm	160.0 ppm	PASS 55.51 %
0.1 V AC+DC @ 50.0 kHz	0.099989803	121.36	0.099956	0.100044	-101.973 ppm	320.0 ppm	PASS 23.10 %
0.1 V AC+DC @ 100.0 kHz	0.099966727	121.36	0.099906	0.100094	-332.728 ppm	820.0 ppm	PASS 35.35 %
0.1 V AC+DC @ 300.0 kHz	0.099601735	0.0121 %	0.099678	0.100322	-0.3983 %	0.3100 %	FAIL 123.63 %
0.1 V AC+DC @ 500.0 kHz	0.099915463	0.0121 %	0.098978	0.101022	-0.0845 %	1.0100 %	PASS 8.27 %
0.1 V AC+DC @ 1.0 MHz	0.099364831	0.0121 %	0.098978	0.101022	-0.6352 %	1.0100 %	PASS 62.14 %
1.0 V AC+DC @ 10 Hz	1.0000205	256.36	0.999634	1.000366	20.518 ppm	110.0 ppm	PASS 5.60 %
1.0 V AC+DC @ 20 Hz	0.99999025	590.91	0.999299	1.000701	-9.752 ppm	110.0 ppm	PASS 1.39 %
1.0 V AC+DC @ 40 Hz	0.99998238	963.64	0.998926	1.001074	-17.623 ppm	110.0 ppm	PASS 1.64 %
1.0 V AC+DC @ 100 Hz	0.99997728	963.64	0.998946	1.001054	-22.723 ppm	90.0 ppm	PASS 2.16 %
1.0 V AC+DC @ 1.0 kHz	0.99998168	1500	0.998410	1.001590	-18.323 ppm	90.0 ppm	PASS 1.15 %
1.0 V AC+DC @ 10.0 kHz	0.99995937	3000	0.996840	1.003160	-40.632 ppm	160.0 ppm	PASS 1.29 %
1.0 V AC+DC @ 20.0 kHz	0.99996117	49.55	0.999790	1.000210	-38.834 ppm	160.0 ppm	PASS 18.53 %
1.0 V AC+DC @ 50.0 kHz	1.0000847	49.55	0.999630	1.000370	84.733 ppm	320.0 ppm	PASS 22.93 %
1.0 V AC+DC @ 100.0 kHz	1.000194	49.55	0.999130	1.000870	193.970 ppm	820.0 ppm	PASS 22.31 %
1.0 V AC+DC @ 300.0 kHz	1.0016821	0.0050 %	0.996850	1.003150	0.1682 %	0.3100 %	PASS 53.41 %
1.0 V AC+DC @ 500.0 kHz	1.003642	0.0050 %	0.989850	1.010150	0.3642 %	1.0100 %	PASS 35.88 %
1.0 V AC+DC @ 1.0 MHz	1.0077827	0.0050 %	0.989850	1.010150	0.7783 %	1.0100 %	PASS 76.68 %
10.0 V AC+DC @ 10 Hz	10.00032	49.55	9.997105	10.002895	31.961 ppm	240.0 ppm	PASS 11.04 %
10.0 V AC+DC @ 20 Hz	10.00002	49.55	9.997105	10.002895	2.018 ppm	240.0 ppm	PASS 0.70 %
10.0 V AC+DC @ 40 Hz	9.9999591	49.55	9.997105	10.002895	-4.094 ppm	240.0 ppm	PASS 1.41 %
10.0 V AC+DC @ 100 Hz	9.9999381	85.45	9.996945	10.003054	-6.193 ppm	220.0 ppm	PASS 2.03 %
10.0 V AC+DC @ 1.0 kHz	9.9999393	138.18	9.996418	10.003582	-6.067 ppm	220.0 ppm	PASS 1.69 %
10.0 V AC+DC @ 10.0 kHz	9.9994218	425.45	9.993545	10.006455	-57.818 ppm	220.0 ppm	PASS 8.96 %
10.0 V AC+DC @ 20.0 kHz	9.9992893	425.45	9.993545	10.006455	-71.066 ppm	220.0 ppm	PASS 11.01 %
10.0 V AC+DC @ 50.0 kHz	9.9995972	1100	9.985300	10.014700	-40.284 ppm	370.0 ppm	PASS 2.74 %
10.0 V AC+DC @ 100.0 kHz	9.9982498	0.1800 %	9.969800	10.030200	-0.0175 %	0.1220 %	PASS 5.80 %
10.0 V AC+DC @ 300.0 kHz	9.995353	0.0048 %	9.958518	10.041482	-0.0465 %	0.4100 %	PASS 11.20 %
10.0 V AC+DC @ 500.0 kHz	10.010004	0.0048 %	9.848518	10.151482	0.1000 %	1.5100 %	PASS 6.60 %
10.0 V AC+DC @ 1.0 MHz	10.075467	0.0048 %	9.848518	10.151482	0.7547 %	1.5100 %	PASS 49.82 %
100.0 V AC+DC @ 1.0 kHz	100.00008	48.18	99.953182	100.046818	0.814 ppm	420.0 ppm	PASS 0.17 %
100.0 V AC+DC @ 10.0 kHz	99.995301	48.18	99.933182	100.066818	-46.991 ppm	620.0 ppm	PASS 7.03 %
100.0 V AC+DC @ 20.0 kHz	99.987814	48.18	99.933182	100.066818	-121.862 ppm	620.0 ppm	PASS 18.24 %
100.0 V AC+DC @ 50.0 kHz	99.974725	0.0048 %	99.873182	100.126818	-0.0253 %	0.1220 %	PASS 19.93 %
100.0 V AC+DC @ 100.0 kHz	99.95154	0.0048 %	99.693182	100.306818	-0.0485 %	0.3020 %	PASS 15.79 %
700.0 V AC+DC @ 1.0 kHz	699.97325	48.18	699.672274	700.327726	-38.212 ppm	420.0 ppm	PASS 8.02 %

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	-2.9902124E-11	71.82 ppm	0	0	Z-check	410 ppm	INFO
50 nADC	5E-08	4.9979038E-08	71.82 ppm	4.997591E-08	5.002409E-08	-419.240 ppm	410 ppm	INFO
100 nADC	1E-07	9.995777E-08	71.82 ppm	9.995182E-08	1.000482E-07	-422.302 ppm	410 ppm	PASS 87.65 %
-100 nADC	-1E-07	-1.0006941E-07	71.82 ppm	-1.000482E-07	-9.995182E-08	694.059 ppm	410 ppm	FAIL 144.05 %
-50 nADC	-5E-08	-5.0078493E-08	71.82 ppm	-5.002409E-08	-4.997591E-08	1569.861 ppm	410 ppm	INFO
Zero µADC	0	-2.4654777E-11	71.82 ppm	0	0	Z-check	410 ppm	INFO
0.5 µADC	5E-07	4.9997891E-07	71.82 ppm	4.999391E-07	5.000609E-07	-42.183 ppm	50 ppm	PASS 34.63 %
1.0 µADC	1E-06	9.9997894E-07	71.82 ppm	9.998782E-07	1.000122E-06	-21.056 ppm	50 ppm	PASS 17.28 %
-1.0 µADC	-1E-06	-1.0000427E-06	71.82 ppm	-1.000122E-06	-9.998782E-07	42.744 ppm	50 ppm	PASS 35.09 %
-0.5 µADC	-5E-07	-5.000527E-07	71.82 ppm	-5.000609E-07	-4.999391E-07	105.406 ppm	50 ppm	PASS 86.53 %
Zero 00 µADC	0	-3.5576052E-11	71.82 ppm	0	0	Z-check	410 ppm	INFO
5 µADC	5E-06	5.0000181E-06	71.82 ppm	4.999556E-06	5.000444E-06	3.614 ppm	17 ppm	PASS 4.07 %
10 µADC	1E-05	1.0000082E-05	71.82 ppm	9.999112E-06	1.000089E-05	8.204 ppm	17 ppm	PASS 9.24 %
-10 µADC	-1E-05	-1.000006E-05	71.82 ppm	-1.000089E-05	-9.999112E-06	5.951 ppm	17 ppm	PASS 6.70 %
-5 µADC	-5E-06	-5.0000474E-06	71.82 ppm	-5.000444E-06	-4.999556E-06	9.486 ppm	17 ppm	PASS 10.68 %
Zero 000 µADC	0	-2.1004099E-11	71.82 ppm	0	0	Z-check	410 ppm	INFO
50 µADC	5E-05	5.000032E-05	71.82 ppm	4.999561E-05	5.000439E-05	6.403 ppm	16 ppm	PASS 7.29 %
100 µADC	0.0001	0.00010000059	71.82 ppm	9.999122E-05	0.0001000088	5.938 ppm	16 ppm	PASS 6.76 %
-100 µADC	-0.0001	-0.00010000053	71.82 ppm	-0.0001000088	-9.999122E-05	5.323 ppm	16 ppm	PASS 6.06 %
-50 µADC	-5E-05	-5.0000214E-05	71.82 ppm	-5.000439E-05	-4.999561E-05	4.277 ppm	16 ppm	PASS 4.87 %
Zero mADC	0	-1.1342508E-11	33.64 ppm	0	0	Z-check	410 ppm	INFO
0.5 mADC	0.0005	0.00049999878	33.64 ppm	0.0004999762	0.0005000238	-2.438 ppm	14 ppm	PASS 5.12 %
1.0 mADC	0.001	0.00099999641	33.64 ppm	0.0009999524	0.001000048	-3.589 ppm	14 ppm	PASS 7.53 %
-1.0 mADC	-0.001	-0.00099999554	33.64 ppm	-0.001000048	-0.0009999524	-4.464 ppm	14 ppm	PASS 9.37 %
-0.5 mADC	-0.0005	-0.00049999783	33.64 ppm	-0.0005000238	-0.0004999762	-4.331 ppm	14 ppm	PASS 9.09 %
Zero 00 mADC	0	-6.5872664E-12	32.27 ppm	0	0	Z-check	410 ppm	INFO
5 mADC	0.005	0.0049999668	32.27 ppm	0.004999769	0.005000231	-6.633 ppm	14 ppm	PASS 14.33 %
10 mADC	0.01	0.0099999532	32.27 ppm	0.009999537	0.01000046	-4.677 ppm	14 ppm	PASS 10.11 %
-10 mADC	-0.01	-0.0099999968	32.27 ppm	-0.01000046	-0.009999537	-0.320 ppm	14 ppm	PASS 0.69 %
-5 mADC	-0.005	-0.0050000058	32.27 ppm	-0.005000231	-0.004999769	1.157 ppm	14 ppm	PASS 2.50 %
Zero 000 mADC	0	7.1810029E-13	53.32 ppm	0	0	Z-check	410 ppm	INFO
50 mADC	0.05	0.050000364	53.32 ppm	0.04999588	0.05000412	7.273 ppm	29 ppm	PASS 8.84 %
100 mADC	0.1	0.10000055	53.32 ppm	0.09999177	0.1000082	5.458 ppm	29 ppm	PASS 6.63 %
-100 mADC	-0.1	-0.10000152	53.32 ppm	-0.1000082	-0.09999177	15.175 ppm	29 ppm	PASS 18.43 %
-50 mADC	-0.05	-0.050000889	53.32 ppm	-0.05000412	-0.04999588	17.782 ppm	29 ppm	PASS 21.60 %
Zero ADC	0	4.7290314E-11	115.22 ppm	0	0	Z-check	410 ppm	INFO
0.5 ADC	0.5	0.50000068	115.22 ppm	0.4998874	0.5001126	1.352 ppm	110 ppm	PASS 0.60 %
1.0 ADC	1	1.0000354	115.22 ppm	0.9997748	1.000225	35.410 ppm	110 ppm	PASS 15.72 %
-1.0 ADC	-1	-1.0000358	115.22 ppm	-1.000225	-0.9997748	35.819 ppm	110 ppm	PASS 15.90 %
-0.5 ADC	-0.5	-0.50000548	115.22 ppm	-0.5001126	-0.4998874	10.961 ppm	110 ppm	PASS 4.87 %

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>1.0021724E-05</b>	0.0165 %	9.9893455e-06	1.00106545e-05	2172.360 ppm	0.0900 %	INFO
100 µA AC @ 50 Hz	0.0001	<b>9.9987597E-05</b>	0.0165 %	9.9893455e-05	0.000100106545	-124.034 ppm	0.0900 %	PASS 11.64 %
1.0 mA AC @ 50 Hz	0.001	<b>0.00099996152</b>	0.0165 %	0.00099903455	0.00100096545	-38.477 ppm	0.0800 %	PASS 3.99 %
10 mA AC @ 50 Hz	0.01	<b>0.0099996389</b>	0.0165 %	0.0099903455	0.0100096545	-36.108 ppm	0.0800 %	PASS 3.74 %
100 mA AC @ 50 Hz	0.1	<b>0.10000362</b>	0.0138 %	0.099906182	0.100093818	36.235 ppm	0.0800 %	PASS 3.86 %
1.0 A AC @ 50 Hz	1.0	<b>1.0000977</b>	0.0138 %	0.99886182	1.00113818	0.0098 %	0.1000 %	PASS 8.59 %
10 µA AC @ 60 Hz	1e-05	<b>1.0022182E-05</b>	0.0138 %	9.9896182e-06	1.00103818e-05	2218.197 ppm	0.0900 %	INFO
100 µA AC @ 60 Hz	0.0001	<b>9.9997577E-05</b>	0.0138 %	9.9896182e-05	0.000100103818	-24.230 ppm	0.0900 %	PASS 2.33 %
1.0 mA AC @ 60 Hz	0.001	<b>0.00099999228</b>	0.0134 %	0.00099906636	0.00100093364	-7.718 ppm	0.0800 %	PASS 0.83 %
10 mA AC @ 60 Hz	0.01	<b>0.010000006</b>	0.0134 %	0.0099906636	0.0100093364	0.619 ppm	0.0800 %	PASS 0.07 %
100 mA AC @ 60 Hz	0.1	<b>0.10000567</b>	0.0308 %	0.099889182	0.100110818	56.689 ppm	0.0800 %	PASS 5.12 %
1.0 A AC @ 60 Hz	1.0	<b>1.0000993</b>	0.0308 %	0.99869182	1.00130818	0.0099 %	0.1000 %	PASS 7.59 %
10 µA AC @ 1.0 kHz	1e-05	<b>1.0021836E-05</b>	0.0165 %	9.9893455e-06	1.00106545e-05	2183.602 ppm	0.0900 %	INFO
100 µA AC @ 1.0 kHz	0.0001	<b>9.9978783E-05</b>	0.0165 %	9.9893455e-05	0.000100106545	-212.175 ppm	0.0900 %	PASS 19.91 %
1.0 mA AC @ 1.0 kHz	0.001	<b>0.0010000366</b>	0.0165 %	0.00099933455	0.00100066545	36.567 ppm	0.0500 %	PASS 5.50 %
10 mA AC @ 1.0 kHz	0.01	<b>0.010000396</b>	0.0165 %	0.0099933455	0.0100066545	39.594 ppm	0.0500 %	PASS 5.95 %
100 mA AC @ 1.0 kHz	0.1	<b>0.10001021</b>	0.0138 %	0.099936182	0.100063818	102.136 ppm	0.0500 %	PASS 16.00 %
1.0 A AC @ 1.0 kHz	1.0	<b>1.0001745</b>	0.0138 %	0.99866182	1.00133818	0.0175 %	0.1200 %	PASS 13.04 %

Test date	28 September 2018 04:54
UUT Internal TEMP?	45.8
Destructive overloads?	229, DESTRUCTIVE OVERLOADS valid 2941

Lab temperature maintained +24°C ±2°C

Internal use only

Not validated