

Manufacturer	KEITHLEY INSTRUMENTS	Calibration date	July 11 2022
Model Number	Model 2001	Ambient Temperature	24.3 °C
Serial	0629860	Relative Humidity	40.1 %
ID Number	Maxwell meter	Pressure	1004.5 hPa
Notes	As received performance test	Test type	HLK5720

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
MFC	Fluke	5720A	03/HLK	E2E6	XC01	07/08/2022	07/08/2023
DMM	HP	3458A	001,X02	X	XD3	03/25/2022	09/25/2022
DC STD	xDevs.com	792X[2]	9.9999800 VDC	±1.2 ppm	XD01	10/25/2021	10/25/2022
STDR	ESI	SR104	10000.0013 Ω	±0.20 ppm	XR04	PC	PC

MFC last calibrated	4.0 days ago	MFC since DCV ZERO	1.0 days ago
MFC since WBFLAT	549.0 days ago	MFC since WBGAIN	155.0 days ago
MFC Confidence level	24h 95% REL	MFC Calibrate date	2022-07-08 00:00:00
MFC Calibrate date Zero	2022-07-11 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	6.95748119039
CAL CONST 13V reference voltage	13.8553055727	CAL CONST 22V range positive zero	398.17794
CAL CONST 22V range negative zero	398.17752	CAL CONST DAC Linearity	0.0
CAL CONST 10KOHM true output resistance	9999.82206214	CAL CONST 10KOHM standard resistance	9998.7587624
CAL CONST, Zero calibration temperature	24.0	CAL CONST, All calibration temp	24.0

This note is test MFC dummy text block for further use.
Calibrator was warmed up 1 year+.

Meter Info	KEITHLEY INSTRUMENTS INC.,MODEL 2001,0629860,B10 /A02	Test date start	11 July 2022 13:19
Test specification interval	24 hour DUT spec	Line frequency	110V 60 Hz
Next calibration date	03/19/02	Last calibration date	03/19/01
DUT temperature to cal	0.1	Last calibration temperature	+23.8

Service information

Last calibration temperature

+23.8

All CAL values

9.996403E-01,-9.051850E-05,1.000374E+01,-1.050206E-04,9.999906E-01,-1.379265E-06,1.000689E+01,1.273680E-04,9.999924E+01,4.964064E+02,9.633898E-03,1.216913E-02,4.056378E-03,1.014095E-02,1.318323E-02,1.015000E+02,1.260000E+02,1.810697E-04,1.000588E+00,1.000446E+00,1.000391E+00,1.000227E+00,9.780119E-02,1.000346E+00,1.225000E+02,1.025000E+02,1.015000E+02,1.300000E+02,1.000000E+00,0.000000E+00,4.000000E+00,1.403172E+00,1.220997E-05,1.753889E+00,1.237312E-06,-7.015808E-01,9.258271E-06,1.753333E+00,-1.048851E-06,7.013792E-01,4.372618E-04,1.404467E+00,8.190925E-06,1.404416E+00,7.163191E-06,1.402534E+00,7.153588E-06,1.389245E+00,7.085813E-06,1.407561E+00,7.179231E-06,1.499565E+00,-8.505940E-03,1.429816E+00,-8.394571E-04,1.787192E+00,-8.394030E-05,1.965831E+00,-7.133280E-06,2.482791E+00,8.995180E-07,2.272829E+00,1.518207E-06,2.499368E+00,1.754704E-06,3.974047E+00,9.919742E-03,1.589723E+00,9.907692E-04,1.499565E+00,3.069430E-05,1.429816E+00,2.926661E-05,1.787192E+00,2.742805E-06,1.965831E+00,3.016964E-06,2.482791E+00,3.810342E-06,7.016013E-01,9.999979E-01,15692,8775,12251,29529,29528,29528,29528,1113,6457,9.357193E-03,9.813657E-04,9.813657E-04,8.921868E-05,7.064183E-06,7.716765E-07,7.017329E-08,4.413357E-09,4.413357E-09

Reference

Direct MFC test, DMM warmed up 8+ hours

DUT Condition

Test as received, automatic, no adjustments

Test procedure : \$Id: k2001.py | Rev 861 | 2018/08/28 10:57:10 tin_fpga \$

Source procedure : \$Id: f5720a.py | Rev 2386 | 2022/07/11 17:19:02 Illya \$

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	-0.68 µV	0.50 µV	-1.700 µV	1.700 µV	N/A	1.20 µV	PASS
Short 0.0 VDC	0.000000E+00	-0.40 µV	0.50 µV	-4.500 µV	4.500 µV	N/A	4.00 µV	PASS
Short 00.0 VDC	0.000000E+00	-35.00 µV	0.50 µV	-80.500 µV	80.500 µV	N/A	80.00 µV	PASS
Short 000.0 VDC	0.000000E+00	-0.00 µV	0.50 µV	-600.500 µV	600.500 µV	N/A	0.60 mV	PASS
Short 0000.0 VDC	0.000000E+00	-600.00 µV	0.50 µV	-6000.501 µV	6000.499 µV	N/A	6.00 mV	PASS
DCV Test	0.1V-1000V	DUT	Source unc.	Low Limit	Hi limit	Measured	24h spec	Result
0.2 VDC (0.20 Range)	0.2000000	0.20000257	7.27 ppm	0.19999535	0.20000465	12.875 ppm	16.00 ppm	PASS 55.33 %
-0.2 VDC (0.20 Range)	-0.2000000	-0.20000272	7.27 ppm	-0.20000465	-0.19999535	13.592 ppm	16.00 ppm	PASS 58.41 %
0.1 VDC (2.00 Range)	0.1000000	0.10000178	7.27 ppm	0.099998373	0.10000163	17.833 ppm	9.00 ppm	FAIL 109.61 %
1.0 VDC (2.00 Range)	1.0000000	1.0000141	3.86 ppm	0.99998714	1.0000129	14.133 ppm	9.00 ppm	FAIL 109.90 %
2.0 VDC (2.00 Range)	2.0000000	2.0000269	3.86 ppm	1.9999743	2.0000257	13.467 ppm	9.00 ppm	FAIL 104.72 %
-0.1 VDC (2.00 Range)	-0.1000000	-0.1000018	7.27 ppm	-0.10000163	-0.099998373	18.000 ppm	9.00 ppm	FAIL 110.63 %
-1.0 VDC (2.00 Range)	-1.0000000	-1.0000142	3.86 ppm	-1.0000129	-0.99998714	14.200 ppm	9.00 ppm	FAIL 110.42 %
-2.0 VDC (2.00 Range)	-2.0000000	-2.0000282	3.86 ppm	-2.0000257	-1.9999743	14.092 ppm	9.00 ppm	FAIL 109.58 %
1.0 VDC (20.00 Range)	1.0000000	0.99998217	3.86 ppm	0.99998514	1.0000149	-17.833 ppm	11.00 ppm	FAIL 120.01 %
10.0 VDC (20.00 Range)	10.0000000	10.000103	2.77 ppm	9.9998623	10.000138	10.283 ppm	11.00 ppm	PASS 74.68 %
20.0 VDC (20.00 Range)	20.0000000	20.000219	2.73 ppm	19.999725	20.000275	10.958 ppm	11.00 ppm	PASS 79.81 %
-1.0 VDC (20.00 Range)	-1.0000000	-1.0000512	3.86 ppm	-1.0000149	-0.99998514	51.167 ppm	11.00 ppm	FAIL 344.32 %
-10.0 VDC (20.00 Range)	-10.0000000	-10.00017	2.77 ppm	-10.000138	-9.9998623	17.000 ppm	11.00 ppm	FAIL 123.46 %
-20.0 VDC (20.00 Range)	-20.0000000	-20.000276	2.73 ppm	-20.000275	-19.999725	13.817 ppm	11.00 ppm	FAIL 100.63 %
10 VDC (200.00 Range)	10.0000000	10.0001	2.77 ppm	9.9998123	10.000188	10.000 ppm	16.00 ppm	PASS 53.28 %
100 VDC (200.00 Range)	100.0000000	100.00133	3.73 ppm	99.998027	100.00197	13.267 ppm	16.00 ppm	PASS 67.24 %
200 VDC (200.00 Range)	200.0000000	200.00288	3.73 ppm	199.99605	200.00395	14.392 ppm	16.00 ppm	PASS 72.94 %
-10 VDC (200.00 Range)	-10.0000000	-10.000097	2.77 ppm	-10.000188	-9.9998123	9.667 ppm	16.00 ppm	PASS 51.50 %
-100 VDC (200.00 Range)	-100.0000000	-100.00119	3.73 ppm	-100.00197	-99.998027	11.900 ppm	16.00 ppm	PASS 60.31 %
-200 VDC (200.00 Range)	-200.0000000	-200.00258	3.73 ppm	-200.00395	-199.99605	12.892 ppm	16.00 ppm	PASS 65.34 %
100 VDC (1000.00 Range)	100.0000000	100.00087	3.73 ppm	99.997327	100.00267	8.667 ppm	23.00 ppm	PASS 32.42 %
200 VDC (1000.00 Range)	200.0000000	200.00207	3.73 ppm	199.99465	200.00535	10.333 ppm	23.00 ppm	PASS 38.66 %
1000 VDC (1000.00 Range)	1000.0000000	1000.0301	5.45 ppm	999.96905	1000.0309	30.117 ppm	23.00 ppm	PASS 97.31 %
-100 VDC (1000.00 Range)	-100.0000000	-100.0018	3.73 ppm	-100.00267	-99.997327	18.000 ppm	23.00 ppm	PASS 67.34 %
-200 VDC (1000.00 Range)	-200.0000000	-200.0029	3.73 ppm	-200.00535	-199.99465	14.500 ppm	23.00 ppm	PASS 54.25 %
-1000 VDC (1000.00 Range)	-1000.0000000	-1000.0296	5.45 ppm	-1000.0309	-999.96905	29.633 ppm	23.00 ppm	FAIL 114.19 %

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
2.0990000	2.0990000	2.09902799	2.73 ppm	2.098971	2.099029	13.33 ppm	11.00 ppm	PASS 97.12 %
1.9999999	1.9999999	2.0000277	2.73 ppm	1.999972	2.000027	13.88 ppm	11.00 ppm	FAIL 101.12 %
1.8888888	1.8888888	1.8889149	2.73 ppm	1.888863	1.888915	13.81 ppm	11.00 ppm	FAIL 100.60 %
1.7777777	1.7777777	1.7778023	2.73 ppm	1.777753	1.777802	13.86 ppm	11.00 ppm	FAIL 100.92 %
1.6666666	1.6666666	1.6666896	2.73 ppm	1.666644	1.666689	13.80 ppm	11.00 ppm	FAIL 100.51 %
1.5555555	1.5555555	1.5555773	2.73 ppm	1.555534	1.555577	14.02 ppm	11.00 ppm	FAIL 102.12 %
1.4444444	1.4444444	1.4444651	2.73 ppm	1.444425	1.444464	14.31 ppm	11.00 ppm	FAIL 104.21 %
1.3333333	1.3333333	1.3333522	2.73 ppm	1.333315	1.333352	14.18 ppm	11.00 ppm	FAIL 103.24 %
1.2222222	1.2222222	1.2222395	2.73 ppm	1.222205	1.222239	14.18 ppm	11.00 ppm	FAIL 103.29 %
1.1111111	1.1111111	1.1111271	2.73 ppm	1.111096	1.111126	14.41 ppm	11.00 ppm	FAIL 104.95 %
1.0999999	1.0999999	1.1000154	2.73 ppm	1.099985	1.100015	14.11 ppm	11.00 ppm	FAIL 102.78 %
0.9999999	0.9999999	1.0000143	2.73 ppm	0.9999862	1.000014	14.36 ppm	11.00 ppm	FAIL 104.56 %
0.8888888	0.8888888	0.8889015	2.73 ppm	0.8888766	0.888901	14.34 ppm	11.00 ppm	FAIL 104.42 %
0.7777777	0.7777777	0.7777891	2.73 ppm	0.777767	0.7777884	14.61 ppm	11.00 ppm	FAIL 106.44 %
0.6666666	0.6666666	0.6666766	2.73 ppm	0.6666574	0.6666758	15.03 ppm	11.00 ppm	FAIL 109.49 %
0.5555555	0.5555555	0.5555641	2.73 ppm	0.5555479	0.5555631	15.40 ppm	11.00 ppm	FAIL 112.16 %
0.4444444	0.4444444	0.4444514	2.73 ppm	0.4444383	0.4444505	15.85 ppm	11.00 ppm	FAIL 115.44 %
0.3333333	0.3333333	0.3333390	2.73 ppm	0.3333287	0.3333379	17.07 ppm	11.00 ppm	FAIL 124.30 %
0.2222222	0.2222222	0.2222261	2.73 ppm	0.2222191	0.2222253	17.65 ppm	11.00 ppm	FAIL 128.55 %
0.1111111	0.1111111	0.1111134	3.86 ppm	0.1111094	0.1111128	20.90 ppm	11.00 ppm	FAIL 140.65 %
0.1234567	0.1234567	0.1234593	7.27 ppm	0.1234544	0.123459	20.70 ppm	11.00 ppm	FAIL 113.30 %
-0.1234567	-0.1234567	-0.1234580	7.27 ppm	-0.123459	-0.1234544	10.44 ppm	11.00 ppm	PASS 57.14 %
-0.1111111	-0.1111111	-0.1111123	3.86 ppm	-0.1111128	-0.1111094	10.90 ppm	11.00 ppm	PASS 73.35 %
-0.2222222	-0.2222222	-0.22222469	2.73 ppm	-0.2222253	-0.2222191	11.20 ppm	11.00 ppm	PASS 81.57 %
-0.3333333	-0.3333333	-0.33333753	2.73 ppm	-0.3333379	-0.3333287	12.70 ppm	11.00 ppm	PASS 92.50 %
-0.4444444	-0.4444444	-0.4444506	2.73 ppm	-0.4444505	-0.4444383	13.88 ppm	11.00 ppm	FAIL 101.06 %
-0.5555555	-0.5555555	-0.5555632	2.73 ppm	-0.5555631	-0.5555479	13.80 ppm	11.00 ppm	FAIL 100.51 %
-0.6666666	-0.6666666	-0.66667553	2.73 ppm	-0.6666758	-0.6666574	13.40 ppm	11.00 ppm	PASS 97.60 %
-0.7777777	-0.7777777	-0.77778832	2.73 ppm	-0.7777884	-0.777767	13.66 ppm	11.00 ppm	PASS 99.47 %
-0.8888888	-0.8888888	-0.8889012	2.73 ppm	-0.888901	-0.8888766	14.00 ppm	11.00 ppm	FAIL 101.97 %
-0.9999999	-0.9999999	-1.0000139	2.73 ppm	-1.000014	-0.9999862	14.00 ppm	11.00 ppm	FAIL 101.97 %
-1.0999999	-1.0999999	-1.1000151	2.73 ppm	-1.100015	-1.099985	13.82 ppm	11.00 ppm	FAIL 100.64 %
-1.1111111	-1.1111111	-1.1111270	2.73 ppm	-1.111126	-1.111096	14.28 ppm	11.00 ppm	FAIL 104.01 %
-1.2222222	-1.2222222	-1.2222392	2.73 ppm	-1.222239	-1.222205	13.90 ppm	11.00 ppm	FAIL 101.24 %
-1.3333333	-1.3333333	-1.3333520	2.73 ppm	-1.333352	-1.333315	14.03 ppm	11.00 ppm	FAIL 102.21 %
-1.4444444	-1.4444444	-1.4444650	2.73 ppm	-1.444464	-1.444425	14.24 ppm	11.00 ppm	FAIL 103.70 %
-1.5555555	-1.5555555	-1.5555773	2.73 ppm	-1.555577	-1.555534	14.02 ppm	11.00 ppm	FAIL 102.12 %
-1.6666666	-1.6666666	-1.6666900	2.73 ppm	-1.666689	-1.666644	14.05 ppm	11.00 ppm	FAIL 102.31 %
-1.7777777	-1.7777777	-1.7778026	2.73 ppm	-1.777802	-1.777753	14.03 ppm	11.00 ppm	FAIL 102.15 %

-1.8888888	-1.8888888	-1.8889152	2.73 ppm	-1.888915	-1.888863	13.96 ppm	11.00 ppm	FAIL 101.67 %
-1.9999999	-1.9999999	-2.0000280	2.73 ppm	-2.000027	-1.999972	14.05 ppm	11.00 ppm	FAIL 102.33 %
-2.0990000	-2.0990000	-2.0990294	2.73 ppm	-2.099029	-2.098971	14.02 ppm	11.00 ppm	FAIL 102.13 %
DCV Linearity	10V Range	DUT	Source unc.	Low Limit	Hi limit	Measured	24h spec	Result
20.990000	20.990000	20.9902221	2.73 ppm	20.98971	20.99029	10.58 ppm	11.00 ppm	PASS 77.07 %
19.999999	19.999999	20.0002060	2.73 ppm	19.99972	20.00027	10.35 ppm	11.00 ppm	PASS 75.38 %
18.888888	18.888888	18.8890834	2.73 ppm	18.88863	18.88915	10.35 ppm	11.00 ppm	PASS 75.36 %
17.777777	17.777777	17.7779633	2.73 ppm	17.77753	17.77802	10.48 ppm	11.00 ppm	PASS 76.34 %
16.666666	16.666666	16.6668400	2.73 ppm	16.66644	16.66689	10.44 ppm	11.00 ppm	PASS 76.04 %
15.555555	15.555555	15.5557199	2.73 ppm	15.55534	15.55577	10.60 ppm	11.00 ppm	PASS 77.20 %
14.444444	14.444444	14.4445958	2.73 ppm	14.44425	14.44464	10.51 ppm	11.00 ppm	PASS 76.53 %
13.333333	13.333333	13.3334753	2.73 ppm	13.33315	13.33352	10.68 ppm	11.00 ppm	PASS 77.75 %
12.222222	12.222222	12.2223479	2.73 ppm	12.22205	12.22239	10.30 ppm	11.00 ppm	PASS 75.02 %
11.111111	11.111111	11.1112191	2.73 ppm	11.11096	11.11126	9.73 ppm	11.00 ppm	PASS 70.87 %
10.999999	10.999999	11.0001046	2.73 ppm	10.99985	11.00015	9.60 ppm	11.00 ppm	PASS 69.89 %
9.999999	9.999999	10.0000880	2.73 ppm	9.999862	10.00014	8.90 ppm	11.00 ppm	PASS 64.82 %
8.888888	8.888888	8.8889670	2.73 ppm	8.888766	8.88901	8.89 ppm	11.00 ppm	PASS 64.73 %
7.777777	7.777777	7.7778537	2.73 ppm	7.77767	7.777884	9.86 ppm	11.00 ppm	PASS 71.79 %
6.666666	6.666666	6.6667240	2.73 ppm	6.666574	6.666758	8.70 ppm	11.00 ppm	PASS 63.36 %
5.555555	5.555555	5.5555970	2.73 ppm	5.555479	5.555631	7.56 ppm	11.00 ppm	PASS 55.06 %
4.444444	4.444444	4.4444699	2.73 ppm	4.444383	4.444505	5.83 ppm	11.00 ppm	PASS 42.43 %
3.333333	3.333333	3.3333394	2.73 ppm	3.333287	3.333379	1.93 ppm	11.00 ppm	PASS 14.08 %
2.222222	2.222222	2.2222161	2.73 ppm	2.222191	2.222253	-2.65 ppm	11.00 ppm	PASS 19.30 %
1.111111	1.111111	1.11109722	3.86 ppm	1.111094	1.111128	-12.40 ppm	11.00 ppm	PASS 83.45 %
0.123457	0.123457	0.1234274	7.27 ppm	0.1234544	0.123459	-236.97 ppm	11.00 ppm	FAIL 1297.05 %
-0.123457	-0.123457	-0.1234944	7.27 ppm	-0.123459	-0.1234544	305.73 ppm	11.00 ppm	FAIL 1673.40 %
-1.111111	-1.111111	-1.1111599	3.86 ppm	-1.111128	-1.111094	44.00 ppm	11.00 ppm	FAIL 296.10 %
-2.222222	-2.222222	-2.2222899	2.73 ppm	-2.222253	-2.222191	30.55 ppm	11.00 ppm	FAIL 222.51 %
-3.333333	-3.333333	-3.3334113	2.73 ppm	-3.333379	-3.333287	23.50 ppm	11.00 ppm	FAIL 171.16 %
-4.444444	-4.444444	-4.4445356	2.73 ppm	-4.444505	-4.444383	20.60 ppm	11.00 ppm	FAIL 150.04 %
-5.555555	-5.555555	-5.5556638	2.73 ppm	-5.555631	-5.555479	19.58 ppm	11.00 ppm	FAIL 142.61 %
-6.666666	-6.666666	-6.6667899	2.73 ppm	-6.666758	-6.666574	18.58 ppm	11.00 ppm	FAIL 135.35 %
-7.777777	-7.777777	-7.7779189	2.73 ppm	-7.777884	-7.77767	18.24 ppm	11.00 ppm	FAIL 132.87 %
-8.888888	-8.888888	-8.8890402	2.73 ppm	-8.88901	-8.888766	17.13 ppm	11.00 ppm	FAIL 124.73 %
-9.999999	-9.999999	-10.0001614	2.73 ppm	-10.00014	-9.999862	16.24 ppm	11.00 ppm	FAIL 118.31 %
-10.999999	-10.999999	-11.0001784	2.73 ppm	-11.00015	-10.99985	16.31 ppm	11.00 ppm	FAIL 118.81 %
-11.111111	-11.111111	-11.1112926	2.73 ppm	-11.11126	-11.11096	16.34 ppm	11.00 ppm	FAIL 119.01 %
-12.222222	-12.222222	-12.2224193	2.73 ppm	-12.22239	-12.22205	16.15 ppm	11.00 ppm	FAIL 117.59 %
-13.333333	-13.333333	-13.3335418	2.73 ppm	-13.33352	-13.33315	15.66 ppm	11.00 ppm	FAIL 114.04 %
-14.444444	-14.444444	-14.4446590	2.73 ppm	-14.44464	-14.44425	14.88 ppm	11.00 ppm	FAIL 108.41 %
-15.555555	-15.555555	-15.5557882	2.73 ppm	-15.55577	-15.55534	14.99 ppm	11.00 ppm	FAIL 109.20 %
-16.666666	-16.666666	-16.6669102	2.73 ppm	-16.66689	-16.66644	14.65 ppm	11.00 ppm	FAIL 106.72 %
-17.777777	-17.777777	-17.7780346	2.73 ppm	-17.77802	-17.77753	14.49 ppm	11.00 ppm	FAIL 105.52 %

-18.888888	-18.888888	-18.8891520	2.73 ppm	-18.88915	-18.88863	13.98 ppm	11.00 ppm	FAIL 101.80 %
-19.999999	-19.999999	-20.0002801	2.73 ppm	-20.00027	-19.99972	14.06 ppm	11.00 ppm	FAIL 102.37 %
-20.990000	-20.990000	-20.99028700	2.73 ppm	-20.99029	-20.98971	13.67 ppm	11.00 ppm	PASS 99.59 %
DCV Linearity	100V Range	DUT	Source unc.	Low Limit	Hi limit	Measured	24h spec	Result
200.99000	200.99000	200.99258111	2.73 ppm	200.98724	200.99276	12.84 ppm	11.00 ppm	PASS 90.23 %
199.99999	199.99999	200.00272667	2.73 ppm	199.99724	200.00274	13.68 ppm	11.00 ppm	PASS 96.16 %
188.88888	188.88888	188.89148333	2.73 ppm	188.88629	188.89147	13.78 ppm	11.00 ppm	PASS 97.04 %
177.77777	177.77777	177.78025444	2.73 ppm	177.77533	177.78021	13.98 ppm	11.00 ppm	PASS 98.59 %
166.66666	166.66666	166.66899111	2.73 ppm	166.66437	166.66895	13.99 ppm	11.00 ppm	PASS 98.87 %
155.55555	155.55555	155.55767667	2.73 ppm	155.55341	155.55769	13.67 ppm	11.00 ppm	PASS 96.83 %
144.44444	144.44444	144.44643889	2.73 ppm	144.44246	144.44642	13.84 ppm	11.00 ppm	PASS 98.21 %
133.33333	133.33333	133.33513667	2.73 ppm	133.3315	133.33516	13.55 ppm	11.00 ppm	PASS 96.35 %
122.22222	122.22222	122.22387000	2.73 ppm	122.22054	122.2239	13.50 ppm	11.00 ppm	PASS 96.18 %
111.11111	111.11111	111.11260000	2.73 ppm	111.10958	111.11264	13.41 ppm	11.00 ppm	PASS 95.73 %
109.99999	109.99999	110.00142667	2.73 ppm	109.99848	110.0015	13.06 ppm	11.00 ppm	PASS 93.26 %
99.99999	99.99999	100.00133556	2.73 ppm	99.998617	100.00136	13.46 ppm	11.00 ppm	PASS 96.25 %
88.88888	88.88888	88.89005333	2.73 ppm	88.88766	88.8901	13.20 ppm	11.00 ppm	PASS 96.14 %
77.77777	77.77777	77.77880778	2.73 ppm	77.776702	77.778838	13.34 ppm	11.00 ppm	PASS 97.18 %
66.66666	66.66666	66.66755444	2.73 ppm	66.665745	66.667575	13.42 ppm	11.00 ppm	PASS 97.72 %
55.55555	55.55555	55.55627889	2.73 ppm	55.554787	55.556313	13.12 ppm	11.00 ppm	PASS 95.56 %
44.44444	44.44444	44.44504778	2.73 ppm	44.44383	44.44505	13.68 ppm	11.00 ppm	PASS 99.60 %
33.33333	33.33333	33.3338056	2.73 ppm	33.332872	33.333788	14.27 ppm	11.00 ppm	FAIL 103.91 %
22.22222	22.22222	22.2225322	2.73 ppm	22.221915	22.222525	14.05 ppm	11.00 ppm	FAIL 102.33 %
11.11111	11.11111	11.1112944	3.86 ppm	11.110945	11.111275	16.60 ppm	11.00 ppm	FAIL 111.71 %
1.23457	1.23457	1.2346311	7.27 ppm	1.2345452	1.2345904	51.28 ppm	11.00 ppm	FAIL 280.69 %
-1.23457	-1.23457	-1.2345400	7.27 ppm	-1.2345904	-1.2345452	-22.52 ppm	11.00 ppm	FAIL 123.25 %
-11.11111	-11.11111	-11.1111644	3.86 ppm	-11.111275	-11.110945	4.90 ppm	11.00 ppm	PASS 32.97 %
-22.22222	-22.22222	-22.2224011	2.73 ppm	-22.222525	-22.221915	8.15 ppm	11.00 ppm	PASS 59.36 %
-33.33333	-33.33333	-33.3336089	2.73 ppm	-33.333788	-33.332872	8.37 ppm	11.00 ppm	PASS 60.94 %
-44.44444	-44.44444	-44.4448678	2.73 ppm	-44.44505	-44.44383	9.63 ppm	11.00 ppm	PASS 70.10 %
-55.55555	-55.55555	-55.5560967	2.73 ppm	-55.556313	-55.554787	9.84 ppm	11.00 ppm	PASS 71.67 %
-66.66666	-66.66666	-66.6673467	2.73 ppm	-66.667575	-66.665745	10.30 ppm	11.00 ppm	PASS 75.02 %
-77.77777	-77.77777	-77.7786067	2.73 ppm	-77.778838	-77.776702	10.76 ppm	11.00 ppm	PASS 78.35 %
-88.88888	-88.88888	-88.8898356	2.73 ppm	-88.8901	-88.88766	10.75 ppm	11.00 ppm	PASS 78.30 %
-99.99999	-99.99999	-100.00112333	2.73 ppm	-100.00136	-99.998617	11.33 ppm	11.00 ppm	PASS 84.08 %
-109.99999	-109.99999	-110.00124889	2.73 ppm	-110.0015	-109.99848	11.44 ppm	11.00 ppm	PASS 85.06 %
-111.11111	-111.11111	-111.11241000	2.73 ppm	-111.11264	-111.10958	11.70 ppm	11.00 ppm	PASS 86.97 %
-122.22222	-122.22222	-122.22361222	2.73 ppm	-122.2239	-122.22054	11.39 ppm	11.00 ppm	PASS 84.85 %
-133.33333	-133.33333	-133.33490444	2.73 ppm	-133.33516	-133.3315	11.81 ppm	11.00 ppm	PASS 88.14 %
-144.44444	-144.44444	-144.44616111	2.73 ppm	-144.44642	-144.44246	11.92 ppm	11.00 ppm	PASS 89.13 %
-155.55555	-155.55555	-155.55744667	2.73 ppm	-155.55769	-155.55341	12.19 ppm	11.00 ppm	PASS 91.39 %
-166.66666	-166.66666	-166.66873000	2.73 ppm	-166.66895	-166.66437	12.42 ppm	11.00 ppm	PASS 93.29 %
-177.77777	-177.77777	-177.78003444	2.73 ppm	-177.78021	-177.77533	12.74 ppm	11.00 ppm	PASS 95.87 %

-188.88888	-188.88888	-188.89126778	2.73 ppm	-188.89147	-188.88629	12.64 ppm	11.00 ppm	PASS 95.35 %
-199.99999	-199.99999	-200.00257111	2.73 ppm	-200.00274	-199.99724	12.91 ppm	11.00 ppm	PASS 97.55 %
-200.99000	-200.99000	-200.99253333	2.73 ppm	-200.99276	-200.98724	12.60 ppm	11.00 ppm	PASS 95.29 %

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 100 MOhm	DUT	Source unc.	Low Limit	Hi limit	Measured	24h spec	Result
1 Ω	0.9997689	0.99981331	85.0 ppm	9.9964793E-01	9.9988987E-01	44.423 ppm	36.0 ppm	PASS 36.71 %
1.9 Ω	1.8997939	1.8998581	85.0 ppm	1.8995640E+00	1.9000238E+00	33.773 ppm	36.0 ppm	PASS 27.91 %
10 Ω	10.000591	10.00085	23.0 ppm	1.0000001E+01	1.0001181E+01	25.880 ppm	36.0 ppm	PASS 43.86 %
19 Ω	19.000192	19.00067	23.0 ppm	1.8999071E+01	1.9001313E+01	25.141 ppm	36.0 ppm	PASS 42.61 %
100 Ω	99.99593	99.997513	10.0 ppm	9.9991830E+01	1.0000003E+02	15.834 ppm	31.0 ppm	PASS 38.62 %
190 Ω	189.99194	189.99488	10.0 ppm	1.8998415E+02	1.8999973E+02	15.466 ppm	31.0 ppm	PASS 37.72 %
1.0 kΩ	1000.021	1000.0411	8.0 ppm	9.9998700E+02	1.0000550E+03	20.116 ppm	26.0 ppm	PASS 59.17 %
1.9 kΩ	1899.88	1899.9114	8.0 ppm	1.8998154E+03	1.8999446E+03	16.545 ppm	26.0 ppm	PASS 48.66 %
10 kΩ	9999.8	9999.9247	8.0 ppm	9.9994900E+03	1.0000110E+04	12.467 ppm	23.0 ppm	PASS 40.22 %
19 kΩ	18999.277	18999.504	9.0 ppm	1.8998669E+04	1.8999885E+04	11.930 ppm	23.0 ppm	PASS 37.28 %
100 kΩ	99994.76	99951.438	9.0 ppm	9.9991410E+04	9.9998110E+04	-433.239 ppm	24.5 ppm	FAIL 1293.25 %
190 kΩ	189989.18	189906.09	9.0 ppm	1.8998282E+05	1.8999554E+05	-437.349 ppm	24.5 ppm	FAIL 1305.52 %
1.0 MΩ	999983.7	999884.1	16.0 ppm	9.9991320E+05	1.0000542E+06	-99.602 ppm	54.5 ppm	FAIL 141.28 %
1.9 MΩ	1899982.1	1899792.9	17.0 ppm	1.8998463E+06	1.9001179E+06	-99.606 ppm	54.5 ppm	FAIL 139.31 %
10 MΩ	9999118	9997821	33.0 ppm	9.9971432E+06	1.0001093E+07	-129.711 ppm	164.5 ppm	PASS 65.68 %
19 MΩ	18998781	18995533	43.0 ppm	1.8994839E+07	1.9002723E+07	-170.978 ppm	164.5 ppm	PASS 82.40 %
100 MΩ	1.0000499E+08	1.0000608E+08	100.0 ppm	9.9684974E+07	1.0032501E+08	10.899 ppm	3100.0 ppm	PASS 0.34 %

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
20R Ω	Range 0.0000286 Ω	1.400e-04 Ω	-0.00014	0.00014	N/A	3.6000e-05 Ω	PASS
200R Ω	Range 0.0001000 Ω	1.400e-03 Ω	-0.0014	0.0014	N/A	2.3000e-05 Ω	PASS
2K Ω	Range -0.0000167 Ω	8.000e-03 Ω	-0.008	0.008	N/A	2.3000e-05 Ω	PASS
20K Ω	Range -0.0006667 Ω	8.000e-02 Ω	-0.08	0.08	N/A	2.3000e-05 Ω	PASS
200K Ω	Range -0.0016667 Ω	9.000e-01 Ω	-0.9	0.9	N/A	2.3000e-05 Ω	PASS
OHM ZERO 2W	DUT	Source unc.	Low Limit	Hi limit	Measured	24h spec	Result
20R Ω	Range 0.3921762 Ω	6.140e-03 Ω	-0.00614	0.00614	N/A	3.6000e-05 Ω	FAIL
200R Ω	Range 0.3600767 Ω	7.400e-03 Ω	-0.0074	0.0074	N/A	2.3000e-05 Ω	FAIL
2K Ω	Range 0.3496167 Ω	1.400e-02 Ω	-0.014	0.014	N/A	2.3000e-05 Ω	FAIL
20K Ω	Range 0.3358333 Ω	8.000e-02 Ω	-0.08	0.08	N/A	2.3000e-05 Ω	FAIL
200K Ω	Range 0.2533333 Ω	9.000e-01 Ω	-0.9	0.9	N/A	2.3000e-05 Ω	PASS
2M Ω	Range -0.3250000 Ω	9.000e+00 Ω	-9	9	N/A	2.3000e-05 Ω	PASS
20M Ω	Range -9.7500000 Ω	9.000e+01 Ω	-90	90	N/A	2.3000e-05 Ω	PASS
200M Ω	Range -530.6250000 Ω	2.000e+04 Ω	-20000.0	20000.0	N/A	2.3000e-05 Ω	PASS
1G Ω	Range -1262.5000000 Ω	1.000e+05 Ω	-100000	100000	N/A	2.3000e-05 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	0.9996252	0.0129 %	0.99672091	1.00327909	VAC	-0.0375 %	0.3150 %	PASS 11.43 %
1.0 VAC @ 1.0 MHz	1.0	0.9987016	0.2500 %	0.989	1.011	VAC	-0.1298 %	0.8500 %	PASS 11.80 %
10 VAC @ 100 Hz	10	9.995411	73.18	9.9947682	10.0052318	VAC	-458.900 ppm	450.0 ppm	PASS 87.71 %
10 VAC @ 400 Hz	10	9.996843	73.18	9.9947682	10.0052318	VAC	-315.700 ppm	450.0 ppm	PASS 60.34 %
10 VAC @ 1.0 kHz	10	9.996725	73.18	9.9947682	10.0052318	VAC	-327.500 ppm	450.0 ppm	PASS 62.60 %
10 VAC @ 50.0 kHz	10	10.00147	0.0129 %	9.9672091	10.0327909	VAC	0.0147 %	0.3150 %	PASS 4.48 %
10 VAC @ 1.0 MHz	10	10.123526	0.3000 %	9.76	10.24	VAC	1.2353 %	2.1000 %	PASS 51.47 %

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
0.02 V AC+DC @ 10 Hz	0.019997	0.0312 %	0.019907	0.020093	-0.0150 %	0.4325 %	PASS 3.23 %
0.02 V AC+DC @ 20 Hz	0.019997	0.0312 %	0.019907	0.020093	-0.0150 %	0.4325 %	PASS 3.23 %
0.02 V AC+DC @ 50 Hz	0.019998	0.0312 %	0.019907	0.020093	-0.0100 %	0.4325 %	PASS 2.16 %
0.02 V AC+DC @ 60 Hz	0.019996	0.0312 %	0.019907	0.020093	-0.0200 %	0.4325 %	PASS 4.31 %
0.02 V AC+DC @ 100 Hz	0.019999	0.0312 %	0.019907	0.020093	-0.0050 %	0.4325 %	PASS 1.08 %
0.02 V AC+DC @ 1.0 kHz	0.019996	0.0312 %	0.019907	0.020093	-0.0200 %	0.4325 %	PASS 4.31 %
0.02 V AC+DC @ 6.25 kHz	0.019996	0.0312 %	0.019907	0.020093	-0.0200 %	0.4325 %	PASS 4.31 %
0.02 V AC+DC @ 10.0 kHz	0.019997	0.0312 %	0.019907	0.020093	-0.0150 %	0.4325 %	PASS 3.23 %
0.02 V AC+DC @ 20.0 kHz	0.019997	0.0312 %	0.019907	0.020093	-0.0150 %	0.4325 %	PASS 3.23 %
0.02 V AC+DC @ 50.0 kHz	0.019993	0.0447 %	0.019905	0.020095	-0.0350 %	0.4325 %	PASS 7.33 %
0.02 V AC+DC @ 100.0 kHz	0.019976	0.0773 %	0.019828	0.020172	-0.1200 %	0.7825 %	PASS 13.96 %
0.02 V AC+DC @ 200.0 kHz	0.019934	0.1500 %	0.019800	0.020200	-0.3300 %	0.8500 %	PASS 33.00 %
0.02 V AC+DC @ 300.0 kHz	0.019914	0.1500 %	0.019800	0.020200	-0.4300 %	0.8500 %	PASS 43.00 %
0.02 V AC+DC @ 500.0 kHz	0.020085	0.2500 %	0.019530	0.020470	0.4250 %	2.1000 %	PASS 18.09 %
0.02 V AC+DC @ 1.0 MHz	0.020313	0.4000 %	0.019500	0.020500	1.5650 %	2.1000 %	PASS 62.60 %
0.2 V AC+DC @ 10 Hz	0.199973	121.36	0.199866	0.200134	-135.000 ppm	550.0 ppm	PASS 20.11 %
0.2 V AC+DC @ 20 Hz	0.199983	121.36	0.199866	0.200134	-85.000 ppm	550.0 ppm	PASS 12.66 %
0.2 V AC+DC @ 50 Hz	0.199987	121.36	0.199886	0.200114	-65.000 ppm	450.0 ppm	PASS 11.38 %
0.2 V AC+DC @ 60 Hz	0.199987	121.36	0.199886	0.200114	-65.000 ppm	450.0 ppm	PASS 11.38 %
0.2 V AC+DC @ 100 Hz	0.199985	121.36	0.199886	0.200114	-75.000 ppm	450.0 ppm	PASS 13.13 %
0.2 V AC+DC @ 1.0 kHz	0.199993	121.36	0.199886	0.200114	-35.000 ppm	450.0 ppm	PASS 6.13 %
0.2 V AC+DC @ 6.25 kHz	0.199999	121.36	0.199886	0.200114	-5.000 ppm	450.0 ppm	PASS 0.88 %
0.2 V AC+DC @ 10.0 kHz	0.2	121.36	0.199886	0.200114	0.000 ppm	450.0 ppm	PASS 0.00 %
0.2 V AC+DC @ 20.0 kHz	0.2	121.36	0.199886	0.200114	0.000 ppm	450.0 ppm	PASS 0.00 %
0.2 V AC+DC @ 50.0 kHz	0.199956	0.0256 %	0.199319	0.200681	-0.0220 %	0.3150 %	PASS 6.46 %
0.2 V AC+DC @ 100.0 kHz	0.19973	0.0591 %	0.198332	0.201668	-0.1350 %	0.7750 %	PASS 16.19 %
0.2 V AC+DC @ 200.0 kHz	0.199069	0.0964 %	0.198107	0.201893	-0.4655 %	0.8500 %	PASS 49.19 %
0.2 V AC+DC @ 300.0 kHz	0.19853	0.0964 %	0.198107	0.201893	-0.7350 %	0.8500 %	PASS 77.67 %
0.2 V AC+DC @ 500.0 kHz	0.198224	0.1500 %	0.198000	0.202000	-0.8880 %	0.8500 %	PASS 88.80 %
0.2 V AC+DC @ 1.0 MHz	0.198035	0.3000 %	0.197700	0.202300	-0.9825 %	0.8500 %	PASS 85.43 %
2.0 V AC+DC @ 10 Hz	2.00016	49.55	1.998801	2.001199	80.000 ppm	550.0 ppm	PASS 13.34 %
2.0 V AC+DC @ 20 Hz	2.00024	49.55	1.998801	2.001199	120.000 ppm	550.0 ppm	PASS 20.02 %
2.0 V AC+DC @ 50 Hz	2.00032	49.55	1.999001	2.000999	160.000 ppm	450.0 ppm	PASS 32.03 %
2.0 V AC+DC @ 60 Hz	2.0003	49.55	1.999001	2.000999	150.000 ppm	450.0 ppm	PASS 30.03 %
2.0 V AC+DC @ 100 Hz	2.00032	49.55	1.999001	2.000999	160.000 ppm	450.0 ppm	PASS 32.03 %
2.0 V AC+DC @ 1.0 kHz	2.00031	49.55	1.999001	2.000999	155.000 ppm	450.0 ppm	PASS 31.03 %
2.0 V AC+DC @ 6.25 kHz	2.00036	49.55	1.998901	2.001099	180.000 ppm	500.0 ppm	PASS 32.75 %
2.0 V AC+DC @ 10.0 kHz	2.00038	49.55	1.998901	2.001099	190.000 ppm	500.0 ppm	PASS 34.57 %

2.0 V AC+DC @ 20.0 kHz	2.00035	49.55	1.998901	2.001099	175.000 ppm	500.0 ppm	PASS 31.84 %
2.0 V AC+DC @ 50.0 kHz	1.99983	0.0085 %	1.993529	2.006471	-0.0085 %	0.3150 %	PASS 2.63 %
2.0 V AC+DC @ 100.0 kHz	1.99764	0.0138 %	1.984224	2.015776	-0.1180 %	0.7750 %	PASS 14.96 %
2.0 V AC+DC @ 200.0 kHz	1.99167	0.0425 %	1.982149	2.017851	-0.4165 %	0.8500 %	PASS 46.66 %
2.0 V AC+DC @ 300.0 kHz	1.98771	0.0425 %	1.982149	2.017851	-0.6145 %	0.8500 %	PASS 68.85 %
2.0 V AC+DC @ 500.0 kHz	1.98693	0.1100 %	1.955800	2.044200	-0.6535 %	2.1000 %	PASS 29.57 %
2.0 V AC+DC @ 1.0 MHz	1.99165	0.1800 %	1.954400	2.045600	-0.4175 %	2.1000 %	PASS 18.31 %
20 V AC+DC @ 10 Hz	19.9988	48.18	19.986036	20.013964	-60.000 ppm	650.0 ppm	PASS 8.59 %
20 V AC+DC @ 20 Hz	19.9995	48.18	19.986036	20.013964	-25.000 ppm	650.0 ppm	PASS 3.58 %
20 V AC+DC @ 50 Hz	20	48.18	19.988036	20.011964	0.000 ppm	550.0 ppm	PASS 0.00 %
20 V AC+DC @ 60 Hz	20	48.18	19.988036	20.011964	0.000 ppm	550.0 ppm	PASS 0.00 %
20 V AC+DC @ 100 Hz	19.9998	48.18	19.988036	20.011964	-10.000 ppm	550.0 ppm	PASS 1.67 %
20 V AC+DC @ 1.0 kHz	19.9983	48.18	19.988036	20.011964	-85.000 ppm	550.0 ppm	PASS 14.21 %
20 V AC+DC @ 6.25 kHz	19.9968	48.18	19.980036	20.019964	-160.000 ppm	950.0 ppm	PASS 16.03 %
20 V AC+DC @ 10.0 kHz	19.998	48.18	19.980036	20.019964	-100.000 ppm	950.0 ppm	PASS 10.02 %
20 V AC+DC @ 20.0 kHz	20.0016	48.18	19.980036	20.019964	80.000 ppm	950.0 ppm	PASS 8.01 %
20 V AC+DC @ 50.0 kHz	20.0055	0.0085 %	19.935291	20.064709	0.0275 %	0.3150 %	PASS 8.50 %
20 V AC+DC @ 100.0 kHz	19.9989	0.0121 %	19.932573	20.067427	-0.0055 %	0.3250 %	PASS 1.63 %
20 V AC+DC @ 200.0 kHz	19.9748	0.0336 %	19.803273	20.196727	-0.1260 %	0.9500 %	PASS 12.81 %
20 V AC+DC @ 300.0 kHz	19.9737	0.0336 %	19.803273	20.196727	-0.1315 %	0.9500 %	PASS 13.37 %
20 V AC+DC @ 500.0 kHz	20.003	0.1100 %	19.138000	20.862000	0.0150 %	4.2000 %	PASS 0.35 %
20 V AC+DC @ 1.0 MHz	20.1608	0.1700 %	19.126000	20.874000	0.8040 %	4.2000 %	PASS 18.40 %
200.0 V AC+DC @ 100 Hz	200.034	60.18	199.877964	200.122036	170.000 ppm	550.0 ppm	PASS 27.84 %
200.0 V AC+DC @ 1.0 kHz	200.011	60.18	199.877964	200.122036	55.000 ppm	550.0 ppm	PASS 9.01 %
200.0 V AC+DC @ 6.25 kHz	200	60.18	199.797964	200.202036	0.000 ppm	950.0 ppm	PASS 0.00 %
200.0 V AC+DC @ 10.0 kHz	200.016	60.18	199.797964	200.202036	80.000 ppm	950.0 ppm	PASS 7.92 %
200.0 V AC+DC @ 20.0 kHz	200.048	60.18	199.797964	200.202036	240.000 ppm	950.0 ppm	PASS 23.75 %
700.0 V AC+DC @ 100 Hz	699.79	73.64	699.283452	700.716548	-300.000 ppm	950.0 ppm	PASS 29.26 %
700.0 V AC+DC @ 1.0 kHz	699.75	73.64	699.283452	700.716548	-357.143 ppm	950.0 ppm	PASS 34.83 %

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 μ ADC	0	-1.1E-10	71.82 ppm	0	0	Z-check	88 ppm	INFO
1 μ ADC	1E-06	1.00003E-06	71.82 ppm	9.998402E-07	1.00016E-06	30.000 ppm	88 ppm	PASS 18.77 %
2 μ ADC	2E-06	1.99998E-06	71.82 ppm	1.99968E-06	2.00032E-06	-10.000 ppm	88 ppm	PASS 6.26 %
-1 μ ADC	-1E-06	-1.00037E-06	71.82 ppm	-1.00016E-06	-9.998402E-07	370.000 ppm	88 ppm	FAIL 231.51 %
-2 μ ADC	-2E-06	-2.00056E-06	71.82 ppm	-2.00032E-06	-1.99968E-06	280.000 ppm	88 ppm	FAIL 175.20 %
Zero 00 μ ADC	0	-3.1E-10	71.82 ppm	0	0	Z-check	88 ppm	INFO
10 μ ADC	1E-05	1.000117E-05	71.82 ppm	9.998402E-06	1.00016E-05	117.000 ppm	88 ppm	PASS 73.21 %
20 μ ADC	2E-05	2.000262E-05	71.82 ppm	1.99968E-05	2.00032E-05	131.000 ppm	88 ppm	PASS 81.97 %
-10 μ ADC	-1E-05	-1.000166E-05	71.82 ppm	-1.00016E-05	-9.998402E-06	166.000 ppm	88 ppm	FAIL 103.87 %
20 μ ADC	-2E-05	-2.000301E-05	71.82 ppm	-2.00032E-05	-1.99968E-05	150.500 ppm	88 ppm	PASS 94.17 %
Zero 000 μ ADC	0	-2.4E-10	71.82 ppm	0	0	Z-check	88 ppm	INFO
100 μ ADC	0.0001	0.00010001414	71.82 ppm	9.998402E-05	0.000100016	141.400 ppm	88 ppm	PASS 88.47 %
200 μ ADC	0.0002	0.00020002821	71.82 ppm	0.000199968	0.000200032	141.050 ppm	88 ppm	PASS 88.26 %
-100 μ ADC	-0.0001	-0.00010001492	71.82 ppm	-0.000100016	-9.998402E-05	149.200 ppm	88 ppm	PASS 93.36 %
-200 μ ADC	-0.0002	-0.00020002901	71.82 ppm	-0.000200032	-0.000199968	145.050 ppm	88 ppm	PASS 90.76 %
Zero mADC	0	-1.4E-09	33.64 ppm	0	0	Z-check	88 ppm	INFO
-1.0 mADC	0.001	0.0010001505	33.64 ppm	0.0009998824	0.001000118	150.500 ppm	84 ppm	FAIL 127.93 %
2.0 mADC	0.002	0.0020003068	33.64 ppm	0.001999765	0.002000235	153.400 ppm	84 ppm	FAIL 130.40 %
-1.0 mADC	-0.001	-0.0010001636	33.64 ppm	-0.001000118	-0.0009998824	163.600 ppm	84 ppm	FAIL 139.07 %
-2.0 mADC	-0.002	-0.0020003209	33.64 ppm	-0.002000235	-0.001999765	160.450 ppm	84 ppm	FAIL 136.39 %
Zero 00 mADC	0	-1.3E-08	32.27 ppm	0	0	Z-check	88 ppm	INFO
10 mADC	0.01	0.010002422	32.27 ppm	0.009998827	0.01000117	242.200 ppm	85 ppm	FAIL 206.53 %
20 mADC	0.02	0.020004859	32.27 ppm	0.01999765	0.02000235	242.950 ppm	85 ppm	FAIL 207.17 %
-10 mADC	-0.01	-0.010002491	32.27 ppm	-0.01000117	-0.009998827	249.100 ppm	85 ppm	FAIL 212.42 %
-20 mADC	-0.02	-0.020004951	32.27 ppm	-0.02000235	-0.01999765	247.550 ppm	85 ppm	FAIL 211.09 %
Zero 000 mADC	0	-1.5E-07	53.32 ppm	0	0	Z-check	88 ppm	INFO
100 mADC	0.1	0.09998699	53.32 ppm	0.09998307	0.1000169	-130.100 ppm	116 ppm	PASS 76.84 %
200 mADC	0.2	0.19996589	53.32 ppm	0.1999661	0.2000339	-170.550 ppm	116 ppm	FAIL 100.73 %
-100 mADC	-0.1	-0.09998798	53.32 ppm	-0.1000169	-0.09998307	-120.200 ppm	116 ppm	PASS 70.99 %
-200 mADC	-0.2	-0.19996795	53.32 ppm	-0.2000339	-0.1999661	-160.250 ppm	116 ppm	PASS 94.64 %
Zero ADC	0	-2.8E-06	115.22 ppm	0	0	Z-check	88 ppm	INFO
1.0 ADC	1	0.99995	115.22 ppm	0.9993648	1.000635	-50.000 ppm	520 ppm	PASS 7.87 %
2.0 ADC	2	1.9996495	115.22 ppm	1.99873	2.00127	-175.250 ppm	520 ppm	PASS 27.59 %
-1.0 ADC	-1	-0.9998928	115.22 ppm	-1.000635	-0.9993648	-107.200 ppm	520 ppm	PASS 16.88 %
-2.0 ADC	-2	-1.9996496	115.22 ppm	-2.00127	-1.99873	-175.200 ppm	520 ppm	PASS 27.58 %

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
50 µA AC @ 50 Hz	5e-05	5.01345E-05	0.0165 %	4.99467275e-05	5.00532725e-05	2690.000 ppm	0.0900 %	FAIL 252.48 %
100 µA AC @ 50 Hz	0.0001	0.0001000852	0.0165 %	9.9893455e-05	0.000100106545	852.000 ppm	0.0900 %	PASS 79.97 %
150 µA AC @ 50 Hz	0.00015	0.0001500366	0.0165 %	0.0001498401825	0.0001501598175	244.000 ppm	0.0900 %	PASS 22.90 %
200 µA AC @ 50 Hz	0.0002	0.0001999962	0.0165 %	0.00019978691	0.00020021309	-19.000 ppm	0.0900 %	PASS 1.78 %
1.0 mA AC @ 50 Hz	0.001	0.0009997235	0.0138 %	0.00099896182	0.00100103818	-276.500 ppm	0.0900 %	PASS 26.63 %
2.0 mA AC @ 50 Hz	0.002	0.0019999748	0.0138 %	0.00199792364	0.00200207636	-12.600 ppm	0.0900 %	PASS 1.21 %
10 mA AC @ 50 Hz	0.01	0.009998221	0.0138 %	0.0099896182	0.0100103818	-177.900 ppm	0.0900 %	PASS 17.14 %
20 mA AC @ 50 Hz	0.02	0.020001619	0.0138 %	0.0199792364	0.0200207636	80.950 ppm	0.0900 %	PASS 7.80 %
100 mA AC @ 50 Hz	0.1	0.09993971	0.0134 %	0.099896636	0.100103364	-602.900 ppm	0.0900 %	PASS 58.33 %
200 mA AC @ 50 Hz	0.2	0.1999258	0.0134 %	0.199793272	0.200206728	-371.000 ppm	0.0900 %	PASS 35.89 %
1.0 A AC @ 50 Hz	1.0	0.9995175	0.0308 %	0.99879182	1.00120818	-482.500 ppm	0.0900 %	PASS 39.94 %
2.0 A AC @ 50 Hz	2.0	1.9994202	0.0308 %	1.99758364	2.00241636	-289.900 ppm	0.0900 %	PASS 23.99 %
50 µA AC @ 60 Hz	5e-05	5.01456E-05	0.0165 %	4.99467275e-05	5.00532725e-05	2912.000 ppm	0.0900 %	FAIL 273.31 %
100 µA AC @ 60 Hz	0.0001	0.0001000403	0.0165 %	9.9893455e-05	0.000100106545	403.000 ppm	0.0900 %	PASS 37.82 %
150 µA AC @ 60 Hz	0.00015	0.0001501256	0.0165 %	0.0001498401825	0.0001501598175	837.333 ppm	0.0900 %	PASS 78.59 %
200 µA AC @ 60 Hz	0.0002	0.0001999234	0.0165 %	0.00019978691	0.00020021309	-383.000 ppm	0.0900 %	PASS 35.95 %
1.0 mA AC @ 60 Hz	0.001	0.0009996619	0.0138 %	0.00099896182	0.00100103818	-338.100 ppm	0.0900 %	PASS 32.57 %
2.0 mA AC @ 60 Hz	0.002	0.0020002249	0.0138 %	0.00199792364	0.00200207636	112.450 ppm	0.0900 %	PASS 10.83 %
10 mA AC @ 60 Hz	0.01	0.009998532	0.0138 %	0.0099896182	0.0100103818	-146.800 ppm	0.0900 %	PASS 14.14 %
20 mA AC @ 60 Hz	0.02	0.020001591	0.0138 %	0.0199792364	0.0200207636	79.550 ppm	0.0900 %	PASS 7.66 %
100 mA AC @ 60 Hz	0.1	0.0999429	0.0134 %	0.099896636	0.100103364	-571.000 ppm	0.0900 %	PASS 55.24 %
200 mA AC @ 60 Hz	0.2	0.1999357	0.0134 %	0.199793272	0.200206728	-321.500 ppm	0.0900 %	PASS 31.10 %
1.0 A AC @ 60 Hz	1.0	0.9995393	0.0308 %	0.99879182	1.00120818	-460.700 ppm	0.0900 %	PASS 38.13 %
2.0 A AC @ 60 Hz	2.0	1.9994751	0.0308 %	1.99758364	2.00241636	-262.450 ppm	0.0900 %	PASS 21.72 %
50 µA AC @ 1.0 kHz	5e-05	5.01286E-05	0.0165 %	4.99467275e-05	5.00532725e-05	2572.000 ppm	0.0900 %	FAIL 241.40 %
100 µA AC @ 1.0 kHz	0.0001	0.0001000846	0.0165 %	9.9893455e-05	0.000100106545	846.000 ppm	0.0900 %	PASS 79.40 %
150 µA AC @ 1.0 kHz	0.00015	0.000150045	0.0165 %	0.0001498401825	0.0001501598175	300.000 ppm	0.0900 %	PASS 28.16 %
200 µA AC @ 1.0 kHz	0.0002	0.0002000101	0.0165 %	0.00019978691	0.00020021309	50.500 ppm	0.0900 %	PASS 4.74 %
1.0 mA AC @ 1.0 kHz	0.001	0.0009998605	0.0138 %	0.00099896182	0.00100103818	-139.500 ppm	0.0900 %	PASS 13.44 %
2.0 mA AC @ 1.0 kHz	0.002	0.0020002234	0.0138 %	0.00199792364	0.00200207636	111.700 ppm	0.0900 %	PASS 10.76 %
10 mA AC @ 1.0 kHz	0.01	0.010000085	0.0138 %	0.0099896182	0.0100103818	8.500 ppm	0.0900 %	PASS 0.82 %
20 mA AC @ 1.0 kHz	0.02	0.020005212	0.0138 %	0.0199792364	0.0200207636	260.600 ppm	0.0900 %	PASS 25.10 %
100 mA AC @ 1.0 kHz	0.1	0.09996142	0.0134 %	0.099896636	0.100103364	-385.800 ppm	0.0900 %	PASS 37.32 %
200 mA AC @ 1.0 kHz	0.2	0.19996827	0.0134 %	0.199793272	0.200206728	-158.650 ppm	0.0900 %	PASS 15.35 %
1.0 A AC @ 1.0 kHz	1.0	0.9997474	0.0308 %	0.99879182	1.00120818	-252.600 ppm	0.0900 %	PASS 20.91 %
2.0 A AC @ 1.0 kHz	2.0	1.9997714	0.0308 %	1.99758364	2.00241636	-114.300 ppm	0.0900 %	PASS 9.46 %
50 µA AC @ 10.0 kHz	5e-05	5.00774E-05	0.1400 %	4.986e-05	5.014e-05	0.1548 %	0.1400 %	PASS 55.29 %
100 µA AC @ 10.0 kHz	0.0001	9.99853E-05	0.1400 %	9.972e-05	0.00010028	-0.0147 %	0.1400 %	PASS 5.25 %

150 μ A AC @ 10.0 kHz	0.00015	0.0001498939	0.1400 %	0.00014958	0.00015042	-0.0707 %	0.1400 %	PASS 25.26 %
200 μ A AC @ 10.0 kHz	0.0002	0.0001998092	0.1400 %	0.00019944	0.00020056	-0.0954 %	0.1400 %	PASS 34.07 %
1.0 mA AC @ 10.0 kHz	0.001	0.0009998135	0.1400 %	0.0009972	0.0010028	-0.0187 %	0.1400 %	PASS 6.66 %
2.0 mA AC @ 10.0 kHz	0.002	0.0019998954	0.1400 %	0.0019944	0.0020056	-0.0052 %	0.1400 %	PASS 1.87 %
10 mA AC @ 10.0 kHz	0.01	0.010000083	0.1300 %	0.009973	0.010027	0.0008 %	0.1400 %	PASS 0.31 %
20 mA AC @ 10.0 kHz	0.02	0.020002653	0.1300 %	0.019946	0.020054	0.0133 %	0.1400 %	PASS 4.91 %
100 mA AC @ 10.0 kHz	0.1	0.10000465	0.1100 %	0.09975	0.10025	0.0046 %	0.1400 %	PASS 1.86 %
200 mA AC @ 10.0 kHz	0.2	0.20002612	0.1100 %	0.1995	0.2005	0.0131 %	0.1400 %	PASS 5.22 %
1.0 A AC @ 10.0 kHz	1.0	0.9976272	0.6100 %	0.9925	1.0075	-0.2373 %	0.1400 %	PASS 31.64 %
2.0 A AC @ 10.0 kHz	2.0	1.9920249	0.6100 %	1.985	2.015	-0.3988 %	0.1400 %	PASS 53.17 %

Test completed

Test date	11 July 2022 18:40
-----------	--------------------

Lab temperature maintained +23°C \pm 2°C

Internal use only

Not validated

2022 © cal.equipment