

Manufacturer	HEWLETT-PACKARD	Calibration date	October 02 2018
Model Number	3458A	Ambient Temperature	22.31 °C
Serial	2823A20499	Relative Humidity	57.24 %
ID Number	3458C	Pressure	1012.38
Notes	Check	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	HULK	5720A	03/HLK	E2E6	XC01	10/03/2018	11/03/2018
DMM	Keithley	2002	MEM2	0603805	XD4	02/25/2018	02/25/2019
STDR	ESI	SR104	10000.0012 KΩ	±1.00 ppm	XR04	06/30/2018	12/30/2018
STDR	xDevs.com/Fluke	SL935	1.00005942 Ω	±0.17 ppm	XR03	05/31/2018	05/31/2019
STDR	xDevs.com/Fluke	SL935	9999.9755 kΩ	±0.33 ppm	XR02	05/31/2018	05/31/2019
DC STD	Wavetek	7000	10.0000007 VDC	±0.9 ppm	XD02	06/07/2018	12/08/2018
DC STD	xDevs.com	792X[2]	10.000009 VDC	±2.2 ppm	XD01	02/16/2018	08/16/2018
Divider	Keithley	262	None	0000	XZ02	08/01/2018	09/01/2018

MFC last calibrated	1.0 days ago	MFC since DCV ZERO	1.0 days ago
MFC since WBFLAT	28.0 days ago	MFC since WBGAIN	29.0 days ago
MFC Confidence level	24h 95% REL	MFC Calibrate date	2018-10-02 00:00:00
MFC Calibrate date Zero	2018-10-02 00:00:00	Calibrate date WB Flatness	2018-09-05 00:00:00
Calibrate date WB Gain	2018-09-04 00:00:00	CAL CONST 6.5V reference voltage	6.95748344554
CAL CONST 13V reference voltage	13.8552951666	CAL CONST 22V range positive zero	398.17944
CAL CONST 22V range negative zero	398.17898	CAL CONST DAC Linearity	0.218888838388
CAL CONST 10KOHM true output resistance	9999.80071803	CAL CONST 10KOHM standard resistance	9998.74977766
CAL CONST, Zero calibration temperature	23.0	CAL CONST, All calibration temp	23.0

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

Meter Info	HP3458A	Last calibration date	7/24/2018
CALSTR?	"Initial 10/03/2018, TEMP=36.7"	Test date	02 October 2018 16:55
DUT Internal TEMP?	36.7	DUT Calibrations number?	5
Self-test result?	106,"OUT OF RANGE -- CALSTR secured"	ACAL ALL result?	0,"NO ERROR"
Firmware	9,2	Options	0,0
CAL? 72	0.985444303	CAL? 1,1	39999.8362
CAL? 2,1	7.09842204	CAL? Res 73	0.9855855
CAL 0 TEMP	35.52	CAL 10V TEMP	36.90
CAL 10KOhm TEMP	36.50	CAL? DCI	0.983475384

Service information

CAL DUMP

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Destructive overloads?

150, DESTRUCTIVE OVERLOADS valid 2941

Reference

Belden direct to MFC

DUT Condition

test

Test procedure : \$!d: hp3458a.py | Rev 899 | 2018/09/08 17:46:40 tin_fpga \$

Source procedure : \$!d: f5720a.py | Rev 934 | 2018/10/02 16:47:51 tin_fpga \$

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	1.60 µV	0.75 µV	-0.910 µV	0.910 µV	N/A	0.16 µV	FAIL
Short 0.0 VDC	0.000000E+00	1.55 µV	0.75 µV	-0.900 µV	0.900 µV	N/A	0.15 µV	FAIL
Short 00.0 VDC	0.000000E+00	1.53 µV	0.75 µV	-1.070 µV	1.070 µV	N/A	0.32 µV	FAIL
Short 000.0 VDC	0.000000E+00	9.49 µV	0.75 µV	-14.750 µV	14.750 µV	N/A	14.00 µV	PASS
Short 0000.0 VDC	0.000000E+00	29.86 µV	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
0.1 VDC (0.10 Range)	0.1000000	0.10000007	7.27 ppm	0.099998723	0.10000128	0.711 ppm	5.50 ppm	PASS 5.57 %
-0.1 VDC (0.10 Range)	-0.1000000	-0.10000028	7.27 ppm	-0.10000128	-0.099998723	2.828 ppm	5.50 ppm	PASS 22.15 %
0.1 VDC (1.00 Range)	0.1000000	0.10000001	7.27 ppm	0.099999093	0.10000091	0.136 ppm	1.80 ppm	PASS 1.50 %
0.2 VDC (1.00 Range)	0.2000000	0.20000013	3.86 ppm	0.19999887	0.20000113	0.628 ppm	1.80 ppm	PASS 11.10 %
1.0 VDC (1.00 Range)	1.0000000	0.99999987	3.86 ppm	0.99999434	1.0000057	-0.125 ppm	1.80 ppm	PASS 2.21 %
-0.1 VDC (1.00 Range)	-0.1000000	-0.1000006	7.27 ppm	-0.10000091	-0.099999093	6.041 ppm	1.80 ppm	PASS 66.60 %
-0.2 VDC (1.00 Range)	-0.2000000	-0.20000088	3.86 ppm	-0.20000113	-0.19999887	4.406 ppm	1.80 ppm	PASS 77.85 %
-1.0 VDC (1.00 Range)	-1.0000000	-1.0000015	3.86 ppm	-1.0000057	-0.99999434	1.476 ppm	1.80 ppm	PASS 26.08 %
1.0 VDC (10.00 Range)	1.0000000	1.0000003	3.86 ppm	0.99999559	1.0000044	0.258 ppm	0.55 ppm	PASS 5.85 %
2.0 VDC (10.00 Range)	2.0000000	2.0000006	2.77 ppm	1.9999934	2.0000066	0.296 ppm	0.55 ppm	PASS 8.92 %
10.0 VDC (10.00 Range)	10.0000000	10.000004	2.73 ppm	9.9999672	10.000033	0.359 ppm	0.55 ppm	PASS 10.95 %
-1.0 VDC (10.00 Range)	-1.0000000	-1.0000021	3.86 ppm	-1.0000044	-0.99999559	2.078 ppm	0.55 ppm	PASS 47.12 %
-2.0 VDC (10.00 Range)	-2.0000000	-2.0000028	2.77 ppm	-2.0000066	-1.9999934	1.378 ppm	0.55 ppm	PASS 41.49 %
-10.0 VDC (10.00 Range)	-10.0000000	-10.000006	2.73 ppm	-10.000033	-9.9999672	0.557 ppm	0.55 ppm	PASS 16.98 %
10 VDC (100.00 Range)	10.0000000	10.000045	2.77 ppm	9.9999443	10.000056	4.478 ppm	2.80 ppm	PASS 80.39 %
20 VDC (100.00 Range)	20.0000000	20.000043	3.73 ppm	19.999869	20.000131	2.135 ppm	2.80 ppm	PASS 32.70 %
100 VDC (100.00 Range)	100.0000000	100.00002	3.73 ppm	99.999347	100.00065	0.151 ppm	2.80 ppm	PASS 2.31 %
-10 VDC (100.00 Range)	-10.0000000	-9.9999704	2.77 ppm	-10.000056	-9.9999443	-2.961 ppm	2.80 ppm	PASS 53.16 %
-20 VDC (100.00 Range)	-20.0000000	-19.999972	3.73 ppm	-20.000131	-19.999869	-1.377 ppm	2.80 ppm	PASS 21.09 %
-100 VDC (100.00 Range)	-100.0000000	-99.999947	3.73 ppm	-100.00065	-99.999347	-0.528 ppm	2.80 ppm	PASS 8.08 %
100 VDC (1000.00 Range)	100.0000000	100.00003	3.73 ppm	99.999367	100.00063	0.314 ppm	2.60 ppm	PASS 4.96 %
200 VDC (1000.00 Range)	200.0000000	199.99994	3.73 ppm	199.99873	200.00127	-0.277 ppm	2.60 ppm	PASS 4.37 %
1000 VDC (1000.00 Range)	1000.0000000	1000.005	5.45 ppm	999.97995	1000.02	5.019 ppm	2.60 ppm	PASS 25.03 %
-100 VDC (1000.00 Range)	-100.0000000	-100.00018	3.73 ppm	-100.00063	-99.999367	1.799 ppm	2.60 ppm	PASS 28.42 %
-200 VDC (1000.00 Range)	-200.0000000	-200.00003	3.73 ppm	-200.00127	-199.99873	0.159 ppm	2.60 ppm	PASS 2.50 %
-1000 VDC (1000.00 Range)	-1000.0000000	-1000.0052	5.45 ppm	-1000.02	-999.97995	5.170 ppm	2.60 ppm	FAIL 130.89 %

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	1.0999929	2.73 ppm	1.099996	1.100004	-6.40 ppm	0.55 ppm	FAIL 195.08 %
0.9999999	0.9999999	0.9999928	2.73 ppm	0.9999966	1.000003	-7.11 ppm	0.55 ppm	FAIL 216.88 %
0.9000000	0.9000000	0.8999928	2.73 ppm	0.899997	0.900003	-8.03 ppm	0.55 ppm	FAIL 244.95 %
0.8888888	0.8888888	0.8888816	2.73 ppm	0.8888859	0.8888917	-8.06 ppm	0.55 ppm	FAIL 245.86 %
0.8000000	0.8000000	0.7999927	2.73 ppm	0.7999974	0.8000026	-9.07 ppm	0.55 ppm	FAIL 276.46 %
0.7777777	0.7777777	0.7777705	2.73 ppm	0.7777751	0.7777803	-9.23 ppm	0.55 ppm	FAIL 281.54 %
0.7000000	0.7000000	0.6999927	2.73 ppm	0.6999977	0.7000023	-10.39 ppm	0.55 ppm	FAIL 316.66 %
0.6666666	0.6666666	0.6666593	2.73 ppm	0.6666644	0.6666688	-10.94 ppm	0.55 ppm	FAIL 333.57 %
0.6000000	0.6000000	0.5999926	2.73 ppm	0.599998	0.600002	-12.30 ppm	0.55 ppm	FAIL 375.00 %
0.5555555	0.5555555	0.5555480	2.73 ppm	0.5555537	0.5555573	-13.43 ppm	0.55 ppm	FAIL 409.44 %
0.5000000	0.5000000	0.4999924	2.73 ppm	0.4999984	0.5000016	-15.11 ppm	0.55 ppm	FAIL 460.74 %
0.4444444	0.4444444	0.4444367	2.73 ppm	0.4444429	0.4444459	-17.40 ppm	0.55 ppm	FAIL 530.49 %
0.4000000	0.4000000	0.3999922	2.73 ppm	0.3999987	0.4000013	-19.57 ppm	0.55 ppm	FAIL 596.52 %
0.3333333	0.3333333	0.3333253	2.73 ppm	0.3333322	0.3333344	-23.88 ppm	0.55 ppm	FAIL 728.04 %
0.3000000	0.3000000	0.2999920	2.73 ppm	0.299999	0.300001	-26.77 ppm	0.55 ppm	FAIL 816.12 %
0.2222222	0.2222222	0.2222140	2.73 ppm	0.2222215	0.2222229	-37.02 ppm	0.55 ppm	FAIL 1128.70 %
0.2000000	0.2000000	0.1999917	2.73 ppm	0.1999993	0.2000007	-41.53 ppm	0.55 ppm	FAIL 1266.30 %
0.1234567	0.1234567	0.1234482	2.73 ppm	0.1234563	0.1234571	-69.25 ppm	0.55 ppm	FAIL 2111.31 %
0.1111111	0.1111111	0.1111026	2.73 ppm	0.1111107	0.1111115	-76.91 ppm	0.55 ppm	FAIL 2344.68 %
0.1000000	0.1000000	0.0999914	2.73 ppm	0.0999967	0.1000003	-86.13 ppm	0.55 ppm	FAIL 2625.96 %
0.0987654	0.0987654	0.0987568	3.86 ppm	0.09876496	0.09876584	-87.01 ppm	0.55 ppm	FAIL 1973.00 %
0.0111111	0.0111111	0.0111022	7.27 ppm	0.01111101	0.01111119	-797.17 ppm	0.55 ppm	FAIL 10193.95 %
-0.0111111	-0.0111111	-0.0111206	7.27 ppm	-0.01111119	-0.01111101	852.98 ppm	0.55 ppm	FAIL 10907.66 %
-0.0987654	-0.0987654	-0.0987752	3.86 ppm	-0.09876584	-0.09876496	99.20 ppm	0.55 ppm	FAIL 2249.46 %
-0.1000000	-0.1000000	-0.1000098	2.73 ppm	-0.1000003	-0.09999967	97.74 ppm	0.55 ppm	FAIL 2979.77 %
-0.1111111	-0.1111111	-0.1111209	2.73 ppm	-0.1111115	-0.1111107	88.61 ppm	0.55 ppm	FAIL 2701.67 %
-0.1234567	-0.1234567	-0.1234666	2.73 ppm	-0.1234571	-0.1234563	79.85 ppm	0.55 ppm	FAIL 2434.32 %
-0.2000000	-0.2000000	-0.2000101	2.73 ppm	-0.2000007	-0.1999993	50.47 ppm	0.55 ppm	FAIL 1538.83 %
-0.2222222	-0.2222222	-0.2222324	2.73 ppm	-0.2222229	-0.2222215	45.77 ppm	0.55 ppm	FAIL 1395.43 %
-0.3000000	-0.3000000	-0.3000104	2.73 ppm	-0.300001	-0.299999	34.66 ppm	0.55 ppm	FAIL 1056.65 %
-0.3333333	-0.3333333	-0.3333438	2.73 ppm	-0.3333344	-0.3333322	31.55 ppm	0.55 ppm	FAIL 961.87 %
-0.4000000	-0.4000000	-0.4000107	2.73 ppm	-0.4000013	-0.3999987	26.87 ppm	0.55 ppm	FAIL 819.17 %
-0.4444444	-0.4444444	-0.4444553	2.73 ppm	-0.4444459	-0.4444429	24.62 ppm	0.55 ppm	FAIL 750.63 %
-0.5000000	-0.5000000	-0.5000111	2.73 ppm	-0.5000016	-0.4999984	22.26 ppm	0.55 ppm	FAIL 678.66 %
-0.5555555	-0.5555555	-0.5555668	2.73 ppm	-0.5555573	-0.5555537	20.40 ppm	0.55 ppm	FAIL 622.05 %
-0.6000000	-0.6000000	-0.6000114	2.73 ppm	-0.600002	-0.599998	19.07 ppm	0.55 ppm	FAIL 581.33 %
-0.6666666	-0.6666666	-0.6666783	2.73 ppm	-0.6666688	-0.6666644	17.59 ppm	0.55 ppm	FAIL 536.22 %
-0.7000000	-0.7000000	-0.7000118	2.73 ppm	-0.7000023	-0.6999977	16.91 ppm	0.55 ppm	FAIL 515.60 %
-0.7777777	-0.7777777	-0.7777899	2.73 ppm	-0.7777803	-0.7777751	15.65 ppm	0.55 ppm	FAIL 477.24 %
-0.8000000	-0.8000000	-0.8000123	2.73 ppm	-0.8000026	-0.7999974	15.34 ppm	0.55 ppm	FAIL 467.77 %
-0.8888888	-0.8888888	-0.8889015	2.73 ppm	-0.8888917	-0.8888859	14.24 ppm	0.55 ppm	FAIL 434.01 %
-0.9000000	-0.9000000	-0.9000127	2.73 ppm	-0.900003	-0.899997	14.12 ppm	0.55 ppm	FAIL 430.34 %
-0.9999999	-0.9999999	-1.0000130	2.73 ppm	-1.000003	-0.9999966	13.10 ppm	0.55 ppm	FAIL 399.34 %
-1.0999999	-1.0999999	-1.1000134	2.73 ppm	-1.100004	-1.099996	12.30 ppm	0.55 ppm	FAIL 374.89 %
DCV Linearity	10V Range	DUT	Source unc.	Low Limit	Hi limit	Measured	24h spec	Result
10.999999	10.999999	11.0000013	2.73 ppm	10.99996	11.00004	0.21 ppm	0.55 ppm	PASS 6.32 %
10.101010	10.101010	10.1010130	2.73 ppm	10.10098	10.10104	0.29 ppm	0.55 ppm	PASS 8.93 %
10.000000	10.000000	10.0000033	2.73 ppm	9.999967	10.00003	0.33 ppm	0.55 ppm	PASS 10.06 %
9.999999	9.999999	10.0000023	2.73 ppm	9.999966	10.00003	0.33 ppm	0.55 ppm	PASS 10.15 %
9.000000	9.000000	9.0000032	2.73 ppm	8.99997	9.00003	0.35 ppm	0.55 ppm	PASS 10.74 %
8.888888	8.888888	8.8888914	2.73 ppm	8.888859	8.888917	0.39 ppm	0.55 ppm	PASS 11.74 %
8.000000	8.000000	8.0000032	2.73 ppm	7.999974	8.000026	0.39 ppm	0.55 ppm	PASS 12.01 %
7.777777	7.777777	7.7777800	2.73 ppm	7.777751	7.777803	0.38 ppm	0.55 ppm	PASS 11.58 %
7.000000	7.000000	7.0000028	2.73 ppm	6.999977	7.000023	0.39 ppm	0.55 ppm	PASS 12.03 %
6.666666	6.666666	6.6666689	2.73 ppm	6.666644	6.666688	0.43 ppm	0.55 ppm	PASS 13.05 %
6.000000	6.000000	6.0000024	2.73 ppm	5.99998	6.00002	0.39 ppm	0.55 ppm	PASS 11.97 %
5.555555	5.555555	5.5555573	2.73 ppm	5.555537	5.555573	0.42 ppm	0.55 ppm	PASS 12.70 %
5.000000	5.000000	5.0000019	2.73 ppm	4.999984	5.000016	0.37 ppm	0.55 ppm	PASS 11.35 %
4.444444	4.444444	4.4444457	2.73 ppm	4.444429	4.444459	0.38 ppm	0.55 ppm	PASS 11.57 %
4.000000	4.000000	4.0000015	2.73 ppm	3.999987	4.000013	0.37 ppm	0.55 ppm	PASS 11.22 %
3.333333	3.333333	3.3333342	2.73 ppm	3.333322	3.333344	0.35 ppm	0.55 ppm	PASS 10.66 %
3.000000	3.000000	3.0000009	2.73 ppm	2.99999	3.00001	0.29 ppm	0.55 ppm	PASS 8.86 %
2.222222	2.222222	2.2222224	2.73 ppm	2.222215	2.222229	0.16 ppm	0.55 ppm	PASS 4.97 %
2.000000	2.000000	2.0000004	2.73 ppm	1.999993	2.000007	0.21 ppm	0.55 ppm	PASS 6.30 %
1.111111	1.111111	1.1111107	2.73 ppm	1.111107	1.111115	-0.24 ppm	0.55 ppm	PASS 7.29 %
1.000000	1.000000	0.9999996	3.86 ppm	0.9999956	1.000004	-0.42 ppm	0.55 ppm	PASS 9.43 %
0.555555	0.555555	0.5555542	7.27 ppm	0.5555507	0.5555593	-1.39 ppm	0.55 ppm	PASS 17.79 %
-0.555555	-0.555555	-0.5555572	7.27 ppm	-0.5555593	-0.5555507	3.97 ppm	0.55 ppm	PASS 50.80 %
-1.000000	-1.000000	-1.0000026	3.86 ppm	-1.000004	-0.9999956	2.58 ppm	0.55 ppm	PASS 58.55 %
-1.111111	-1.111111	-1.1111136	2.73 ppm	-1.111115	-1.111107	2.38 ppm	0.55 ppm	PASS 72.55 %

-2.000000	-2.000000	-2.0000034	2.73 ppm	-2.000007	-1.999993	1.71 ppm	0.55 ppm	PASS 51.98 %
-2.222222	-2.222222	-2.2222254	2.73 ppm	-2.222229	-2.222215	1.53 ppm	0.55 ppm	PASS 46.58 %
-3.000000	-3.000000	-3.0000045	2.73 ppm	-3.00001	-2.99999	1.49 ppm	0.55 ppm	PASS 45.30 %
-3.333333	-3.333333	-3.3333374	2.73 ppm	-3.333344	-3.333322	1.33 ppm	0.55 ppm	PASS 40.48 %
-4.000000	-4.000000	-4.0000052	2.73 ppm	-4.000013	-3.999987	1.30 ppm	0.55 ppm	PASS 39.69 %
-4.444444	-4.444444	-4.4444495	2.73 ppm	-4.444459	-4.444429	1.25 ppm	0.55 ppm	PASS 38.04 %
-5.000000	-5.000000	-5.0000062	2.73 ppm	-5.000016	-4.999984	1.23 ppm	0.55 ppm	PASS 37.60 %
-5.555555	-5.555555	-5.5555616	2.73 ppm	-5.555573	-5.555537	1.18 ppm	0.55 ppm	PASS 36.04 %
-6.000000	-6.000000	-6.0000070	2.73 ppm	-6.00002	-5.99998	1.17 ppm	0.55 ppm	PASS 35.59 %
-6.666666	-6.666666	-6.6666741	2.73 ppm	-6.666688	-6.666644	1.22 ppm	0.55 ppm	PASS 37.08 %
-7.000000	-7.000000	-7.0000085	2.73 ppm	-7.000023	-6.999977	1.22 ppm	0.55 ppm	PASS 37.06 %
-7.777777	-7.777777	-7.7777865	2.73 ppm	-7.777803	-7.777751	1.23 ppm	0.55 ppm	PASS 37.41 %
-8.000000	-8.000000	-8.0000102	2.73 ppm	-8.000026	-7.999974	1.27 ppm	0.55 ppm	PASS 38.80 %
-8.888888	-8.888888	-8.8888993	2.73 ppm	-8.888917	-8.888859	1.27 ppm	0.55 ppm	PASS 38.68 %
-9.000000	-9.000000	-9.0000117	2.73 ppm	-9.00003	-8.99997	1.30 ppm	0.55 ppm	PASS 39.55 %
-9.999999	-9.999999	-10.0000119	2.73 ppm	-10.00003	-9.999966	1.30 ppm	0.55 ppm	PASS 39.48 %
-10.000000	-10.000000	-10.0000130	2.73 ppm	-10.00003	-9.999967	1.30 ppm	0.55 ppm	PASS 39.73 %
-10.101010	-10.101010	-10.1010233	2.73 ppm	-10.10104	-10.10098	1.32 ppm	0.55 ppm	PASS 40.11 %
-10.999999	-10.999999	-11.0000133	2.73 ppm	-11.00004	-10.99996	1.30 ppm	0.55 ppm	PASS 39.66 %
DCV Linearity	100V Range	DUT	Source unc.	Low Limit	Hi limit	Measured	24h spec	Result
100.99999	100.99999	101.0000528	2.73 ppm	100.99966	101.00032	0.62 ppm	0.55 ppm	PASS 13.84 %
100.10101	100.10101	100.1010747	2.73 ppm	100.10068	100.10134	0.65 ppm	0.55 ppm	PASS 14.42 %
100.00000	100.00000	100.0000700	2.73 ppm	99.999672	100.00033	0.70 ppm	0.55 ppm	PASS 15.62 %
99.99999	99.99999	100.0000649	2.73 ppm	99.999662	100.00032	0.75 ppm	0.55 ppm	PASS 16.73 %
90.00000	90.00000	90.0000787	2.73 ppm	89.999705	90.000295	0.87 ppm	0.55 ppm	PASS 26.66 %
88.88888	88.88888	88.8889601	2.73 ppm	88.888588	88.889172	0.90 ppm	0.55 ppm	PASS 27.46 %
80.00000	80.00000	80.0000812	2.73 ppm	79.999738	80.000262	1.01 ppm	0.55 ppm	PASS 30.94 %
77.77777	77.77777	77.7778559	2.73 ppm	77.777515	77.778025	1.10 ppm	0.55 ppm	PASS 33.68 %
70.00000	70.00000	70.0000831	2.73 ppm	69.99977	70.00023	1.19 ppm	0.55 ppm	PASS 36.21 %
66.66666	66.66666	66.6667360	2.73 ppm	66.666441	66.666879	1.14 ppm	0.55 ppm	PASS 34.77 %
60.00000	60.00000	60.0000799	2.73 ppm	59.999803	60.000197	1.33 ppm	0.55 ppm	PASS 40.60 %
55.55555	55.55555	55.5556221	2.73 ppm	55.555368	55.555732	1.30 ppm	0.55 ppm	PASS 39.59 %
50.00000	50.00000	50.0000667	2.73 ppm	49.999836	50.000164	1.33 ppm	0.55 ppm	PASS 40.64 %
44.44444	44.44444	44.4445032	2.73 ppm	44.444294	44.444586	1.42 ppm	0.55 ppm	PASS 43.32 %
40.00000	40.00000	40.0000574	2.73 ppm	39.999869	40.000131	1.44 ppm	0.55 ppm	PASS 43.77 %
33.33333	33.33333	33.3333782	2.73 ppm	33.333221	33.333439	1.45 ppm	0.55 ppm	PASS 44.08 %
30.00000	30.00000	30.0000396	2.73 ppm	29.999902	30.000098	1.32 ppm	0.55 ppm	PASS 40.26 %
22.22222	22.22222	22.2222495	2.73 ppm	22.222147	22.222293	1.33 ppm	0.55 ppm	PASS 40.52 %
20.00000	20.00000	20.0000260	2.73 ppm	19.999934	20.000066	1.30 ppm	0.55 ppm	PASS 39.65 %
11.11111	11.11111	11.1111216	2.73 ppm	11.111075	11.111147	0.95 ppm	0.55 ppm	PASS 29.03 %
10.00000	10.00000	10.0000073	3.86 ppm	9.9999559	10.000044	0.73 ppm	0.55 ppm	PASS 16.60 %
9.87654	9.87654	9.8765503	7.27 ppm	9.8764658	9.8766202	0.74 ppm	0.55 ppm	PASS 9.47 %
-9.87654	-9.87654	-9.8765701	7.27 ppm	-9.8766202	-9.8764658	2.74 ppm	0.55 ppm	PASS 35.07 %
-10.00000	-10.00000	-10.0000308	3.86 ppm	-10.000044	-9.9999559	3.08 ppm	0.55 ppm	PASS 69.81 %
-11.11111	-11.11111	-11.11114303	2.73 ppm	-11.111147	-11.111075	2.88 ppm	0.55 ppm	PASS 87.87 %
-20.00000	-20.00000	-20.0000465	2.73 ppm	-20.000066	-19.999934	2.32 ppm	0.55 ppm	PASS 70.87 %
-22.22222	-22.22222	-22.2222700	2.73 ppm	-22.222293	-22.222147	2.25 ppm	0.55 ppm	PASS 68.61 %
-30.00000	-30.00000	-30.0000629	2.73 ppm	-30.000098	-29.999902	2.10 ppm	0.55 ppm	PASS 63.93 %
-33.33333	-33.33333	-33.3334019	2.73 ppm	-33.333439	-33.333221	2.16 ppm	0.55 ppm	PASS 65.78 %
-40.00000	-40.00000	-40.0000856	2.73 ppm	-40.000131	-39.999869	2.14 ppm	0.55 ppm	PASS 65.27 %
-44.44444	-44.44444	-44.4445345	2.73 ppm	-44.444586	-44.444294	2.13 ppm	0.55 ppm	PASS 64.84 %
-50.00000	-50.00000	-50.0001033	2.73 ppm	-50.000164	-49.999836	2.07 ppm	0.55 ppm	PASS 62.98 %
-55.55555	-55.55555	-55.5556656	2.73 ppm	-55.555732	-55.555368	2.08 ppm	0.55 ppm	PASS 63.46 %
-60.00000	-60.00000	-60.0001282	2.73 ppm	-60.000197	-59.999803	2.14 ppm	0.55 ppm	PASS 65.15 %
-66.66666	-66.66666	-66.6668005	2.73 ppm	-66.666879	-66.666441	2.11 ppm	0.55 ppm	PASS 64.27 %
-70.00000	-70.00000	-70.0001474	2.73 ppm	-70.00023	-69.99977	2.11 ppm	0.55 ppm	PASS 64.18 %
-77.77777	-77.77777	-77.7779285	2.73 ppm	-77.778025	-77.777515	2.04 ppm	0.55 ppm	PASS 62.12 %
-80.00000	-80.00000	-80.0001649	2.73 ppm	-80.000262	-79.999738	2.06 ppm	0.55 ppm	PASS 62.85 %
-88.88888	-88.88888	-88.8890624	2.73 ppm	-88.889172	-88.888588	2.05 ppm	0.55 ppm	PASS 62.56 %
-90.00000	-90.00000	-90.0001853	2.73 ppm	-90.000295	-89.999705	2.06 ppm	0.55 ppm	PASS 62.76 %
-99.99999	-99.99999	-100.00018965	2.73 ppm	-100.00032	-99.999662	2.00 ppm	0.55 ppm	PASS 95.99 %
-100.00000	-100.00000	-100.00020335	2.73 ppm	-100.00033	-99.999672	2.03 ppm	0.55 ppm	PASS 97.76 %
-100.10101	-100.10101	-100.10121680	2.73 ppm	-100.10134	-100.10068	2.07 ppm	0.55 ppm	PASS 99.38 %
-100.99999	-100.99999	-101.00019880	2.73 ppm	-101.00032	-100.99966	2.07 ppm	0.55 ppm	PASS 99.97 %

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	0.9998176	0.99980092	32.0 ppm	9.9977761E-01	9.9985759E-01	-16.687 ppm	8.0 ppm	PASS 41.72 %
1.9 Ω	1.8999043	1.8998636	25.0 ppm	1.8998416E+00	1.8999670E+00	-21.402 ppm	8.0 ppm	PASS 64.85 %
10 Ω	10.000046	10.000337	5.0 ppm	9.9999160E+00	1.0000176E+01	29.110 ppm	8.0 ppm	FAIL 223.92 %
19 Ω	18.999456	19.000093	4.0 ppm	1.8999266E+01	1.8999646E+01	33.533 ppm	6.0 ppm	FAIL 335.33 %
100 Ω	100.00137	100.00379	1.7 ppm	1.0000060E+02	1.0000214E+02	24.194 ppm	6.0 ppm	FAIL 314.20 %
190 Ω	189.99466	189.99939	1.7 ppm	1.8999392E+02	1.8999540E+02	24.875 ppm	2.2 ppm	FAIL 637.83 %
1.0 kΩ	1000.0011	1000.0152	1.7 ppm	9.9999720E+02	1.0000050E+03	14.100 ppm	2.2 ppm	FAIL 361.55 %
1.9 kΩ	1900.0082	1900.0414	1.7 ppm	1.9000008E+03	1.9000156E+03	17.468 ppm	2.2 ppm	FAIL 447.90 %
10 kΩ	9999.801	9999.8813	1.6 ppm	9.9997630E+03	9.9998390E+03	8.028 ppm	2.2 ppm	FAIL 211.25 %
19 kΩ	18999.408	18999.555	1.7 ppm	1.8999334E+04	1.8999482E+04	7.730 ppm	2.2 ppm	FAIL 198.21 %
100 kΩ	99995.67	99995.053	2.0 ppm	9.9995250E+04	9.9996090E+04	-6.168 ppm	2.2 ppm	FAIL 146.85 %
190 kΩ	189991.01	189990.25	2.0 ppm	1.8998854E+05	1.8999348E+05	-3.990 ppm	11.0 ppm	PASS 30.69 %
1.0 MΩ	1000000	999962.63	2.5 ppm	9.9998650E+05	1.0000135E+06	-37.372 ppm	11.0 ppm	FAIL 276.83 %
1.9 MΩ	1900007.4	1899913.9	3.0 ppm	1.8998972E+06	1.9001176E+06	-49.230 ppm	55.0 ppm	PASS 84.88 %
10 MΩ	9999306	9996883	10.0 ppm	9.9986560E+06	9.9999560E+06	-242.321 ppm	55.0 ppm	FAIL 372.80 %
19 MΩ	18999038	18998123	20.0 ppm	1.8988969E+07	1.9009107E+07	-48.156 ppm	510.0 ppm	PASS 9.09 %
100 MΩ	1.000119E+08	99983763	50.0 ppm	9.9955893E+07	1.0006791E+08	-281.337 ppm	510.0 ppm	PASS 50.24 %
1 GΩ STD	9.9751672E+08	1.0000000E+09	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 0.0000014 Ω	5.000e-05 Ω	-5e-05	5e-05	N/A	8.0000e-06 Ω	PASS
100 Ω	Range -0.0000323 Ω	5.500e-04 Ω	-0.00055	0.00055	N/A	2.2000e-06 Ω	PASS
1.0 kΩ	Range 0.0000144 Ω	5.500e-03 Ω	-0.0055	0.0055	N/A	2.2000e-06 Ω	PASS
10 kΩ	Range -0.0000180 Ω	5.500e-02 Ω	-0.055	0.055	N/A	2.2000e-06 Ω	PASS
100 kΩ	Range 0.0025137 Ω	5.500e-01 Ω	-0.55	0.55	N/A	2.2000e-06 Ω	PASS
1.0 MΩ	Range 0.0287182 Ω	5.500e+00 Ω	-5.5	5.5	N/A	2.2000e-06 Ω	PASS
10 MΩ	Range -0.0718217 Ω	5.500e+01 Ω	-55	55	N/A	2.2000e-06 Ω	PASS
100 MΩ	Range -0.2872869 Ω	5.500e+02 Ω	-550	550	N/A	2.2000e-06 Ω	PASS
1 GΩ	Range -0.5386628 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 0.2292183 Ω	3.000e-01 Ω	-0.3	0.3	N/A	8.0000e-06 Ω	PASS
100 Ω	Range 0.2282636 Ω	3.500e-01 Ω	-0.35	0.35	N/A	2.2000e-06 Ω	PASS
1.0 kΩ	Range 0.2278599 Ω	4.000e-01 Ω	-0.4	0.4	N/A	2.2000e-06 Ω	PASS
10 kΩ	Range 0.2213844 Ω	4.000e-01 Ω	-0.4	0.4	N/A	2.2000e-06 Ω	PASS
100 kΩ	Range 0.2050427 Ω	5.500e-01 Ω	-0.55	0.55	N/A	2.2000e-06 Ω	PASS
1.0 MΩ	Range 0.6353766 Ω	5.500e+00 Ω	-5.5	5.5	N/A	2.2000e-06 Ω	PASS
10 MΩ	Range 4.2373689 Ω	5.500e+01 Ω	-55	55	N/A	2.2000e-06 Ω	PASS
100 MΩ	Range 4.7760198 Ω	5.500e+02 Ω	-550	550	N/A	2.2000e-06 Ω	PASS
1 GΩ	Range 4.2732806 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	0.99997428	129.09	0.99955091	1.00044909	VAC	-25.721 ppm	320.0 ppm	PASS 5.73 %
1.0 VAC @ 1.0 MHz	1.0	1.012085	0.2500 %	0.9874	1.0126	VAC	1.2085 %	1.0100 %	PASS 95.91 %
10 VAC @ 40 Hz	10	10.002545	0.0073 %	9.8982682	10.1017318	VAC	0.0255 %	1.0100 %	PASS 2.50 %
10 VAC @ 200 Hz	10	10.001691	73.18	9.9983682	10.0016318	VAC	169.103 ppm	90.0 ppm	FAIL 103.63 %
10 VAC @ 500 Hz	10	10.001708	73.18	9.9983682	10.0016318	VAC	170.761 ppm	90.0 ppm	FAIL 104.65 %
10 VAC @ 50.0 kHz	10	9.9990334	129.09	9.9955091	10.0044909	VAC	-96.657 ppm	320.0 ppm	PASS 21.52 %
10 VAC @ 1.0 MHz	10	10.08959	0.3000 %	9.869	10.131	VAC	0.8959 %	1.0100 %	PASS 68.39 %

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	0.010001643	312.27	0.009991	0.010009	164.324 ppm	600.0 ppm	PASS 18.01 %
0.01 V AC+DC @ 20 Hz	0.010000999	312.27	0.009991	0.010009	99.857 ppm	600.0 ppm	PASS 10.95 %
0.01 V AC+DC @ 40 Hz	0.010001133	312.27	0.009991	0.010009	113.307 ppm	600.0 ppm	PASS 12.42 %
0.01 V AC+DC @ 100 Hz	0.010001659	312.27	0.009994	0.010006	165.948 ppm	310.0 ppm	PASS 26.67 %
0.01 V AC+DC @ 1.0 kHz	0.010000003	312.27	0.009994	0.010006	0.256 ppm	310.0 ppm	PASS 0.04 %
0.01 V AC+DC @ 10.0 kHz	0.0099956162	312.27	0.009993	0.010007	-438.377 ppm	410.0 ppm	PASS 60.69 %
0.01 V AC+DC @ 20.0 kHz	0.009992735	312.27	0.009993	0.010007	-726.495 ppm	410.0 ppm	FAIL 100.59 %
0.01 V AC+DC @ 50.0 kHz	0.0099946151	0.0312 %	0.009986	0.010014	-0.0538 %	0.1110 %	PASS 37.86 %
0.01 V AC+DC @ 100.0 kHz	0.0099599939	0.0312 %	0.009946	0.010054	-0.4001 %	0.5110 %	PASS 73.78 %
0.01 V AC+DC @ 300.0 kHz	0.010613261	0.0447 %	0.009594	0.010406	6.1326 %	4.0200 %	FAIL 150.87 %
0.01 V AC+DC @ 500.0 kHz	0.0095997989	0.0773 %	0.006787	0.013213	-4.0020 %	32.0500 %	PASS 12.46 %
0.01 V AC+DC @ 1.0 MHz	0.0088120348	0.1500 %	0.006780	0.013220	-11.8797 %	32.0500 %	PASS 36.89 %
0.1 V AC+DC @ 10 Hz	0.10000082	1500	0.099839	0.100161	8.207 ppm	110.0 ppm	PASS 0.51 %
0.1 V AC+DC @ 20 Hz	0.09999898	2500	0.099739	0.100261	-10.205 ppm	110.0 ppm	PASS 0.39 %
0.1 V AC+DC @ 40 Hz	0.099998648	4000	0.099589	0.100411	-13.521 ppm	110.0 ppm	PASS 0.33 %
0.1 V AC+DC @ 100 Hz	0.099998906	121.36	0.099979	0.100021	-10.943 ppm	90.0 ppm	PASS 5.18 %
0.1 V AC+DC @ 1.0 kHz	0.09999904	121.36	0.099979	0.100021	-9.601 ppm	90.0 ppm	PASS 4.54 %
0.1 V AC+DC @ 10.0 kHz	0.099995106	121.36	0.099972	0.100028	-48.939 ppm	160.0 ppm	PASS 17.39 %
0.1 V AC+DC @ 20.0 kHz	0.099988227	121.36	0.099972	0.100028	-117.728 ppm	160.0 ppm	PASS 41.84 %
0.1 V AC+DC @ 50.0 kHz	0.099989741	121.36	0.099956	0.100044	-102.587 ppm	320.0 ppm	PASS 23.24 %
0.1 V AC+DC @ 100.0 kHz	0.099939424	121.36	0.099906	0.100094	-605.755 ppm	820.0 ppm	PASS 64.35 %
0.1 V AC+DC @ 300.0 kHz	0.098976024	0.0121 %	0.099678	0.100322	-1.0240 %	0.3100 %	FAIL 317.87 %
0.1 V AC+DC @ 500.0 kHz	0.099696376	0.0121 %	0.098978	0.101022	-0.3036 %	1.0100 %	PASS 29.70 %
0.1 V AC+DC @ 1.0 MHz	0.09906873	0.0121 %	0.098978	0.101022	-0.9313 %	1.0100 %	PASS 91.11 %
1.0 V AC+DC @ 10 Hz	1.000037	256.36	0.999634	1.000366	37.019 ppm	110.0 ppm	PASS 10.10 %
1.0 V AC+DC @ 20 Hz	1.0000219	590.91	0.999299	1.000701	21.859 ppm	110.0 ppm	PASS 3.12 %
1.0 V AC+DC @ 40 Hz	1.0000181	963.64	0.998926	1.001074	18.119 ppm	110.0 ppm	PASS 1.69 %
1.0 V AC+DC @ 100 Hz	1.0000151	963.64	0.998946	1.001054	15.082 ppm	90.0 ppm	PASS 1.43 %
1.0 V AC+DC @ 1.0 kHz	1.0000347	1500	0.998410	1.001590	34.708 ppm	90.0 ppm	PASS 2.18 %
1.0 V AC+DC @ 10.0 kHz	0.999964	3000	0.996840	1.003160	-35.997 ppm	160.0 ppm	PASS 1.14 %
1.0 V AC+DC @ 20.0 kHz	0.99992298	49.55	0.999790	1.000210	-77.025 ppm	160.0 ppm	PASS 36.76 %
1.0 V AC+DC @ 50.0 kHz	0.9999997	49.55	0.999630	1.000370	-0.304 ppm	320.0 ppm	PASS 0.08 %
1.0 V AC+DC @ 100.0 kHz	1.0000692	49.55	0.999130	1.000870	69.182 ppm	820.0 ppm	PASS 7.96 %
1.0 V AC+DC @ 300.0 kHz	1.001325	0.0050 %	0.996850	1.003150	0.1325 %	0.3100 %	PASS 42.07 %
1.0 V AC+DC @ 500.0 kHz	1.0035751	0.0050 %	0.989850	1.010150	0.3575 %	1.0100 %	PASS 35.22 %
1.0 V AC+DC @ 1.0 MHz	1.0100427	0.0050 %	0.989850	1.010150	1.0043 %	1.0100 %	PASS 98.95 %
10.0 V AC+DC @ 10 Hz	10.000531	49.55	9.997105	10.002895	53.100 ppm	240.0 ppm	PASS 18.34 %
10.0 V AC+DC @ 20 Hz	10.000337	49.55	9.997105	10.002895	33.728 ppm	240.0 ppm	PASS 11.65 %
10.0 V AC+DC @ 40 Hz	10.000316	49.55	9.997105	10.002895	31.600 ppm	240.0 ppm	PASS 10.91 %
10.0 V AC+DC @ 100 Hz	10.000271	85.45	9.996945	10.003054	27.124 ppm	220.0 ppm	PASS 8.88 %
10.0 V AC+DC @ 1.0 kHz	10.000481	138.18	9.996418	10.003582	48.063 ppm	220.0 ppm	PASS 13.42 %
10.0 V AC+DC @ 10.0 kHz	9.9998054	425.45	9.993545	10.006455	-19.460 ppm	220.0 ppm	PASS 3.01 %
10.0 V AC+DC @ 20.0 kHz	9.9994152	425.45	9.993545	10.006455	-58.483 ppm	220.0 ppm	PASS 9.06 %
10.0 V AC+DC @ 50.0 kHz	9.9987765	1100	9.985300	10.014700	-122.352 ppm	370.0 ppm	PASS 8.32 %
10.0 V AC+DC @ 100.0 kHz	9.996403	0.1800 %	9.969800	10.030200	-0.0360 %	0.1220 %	PASS 11.91 %
10.0 V AC+DC @ 300.0 kHz	9.9861049	0.0048 %	9.958518	10.041482	-0.1390 %	0.4100 %	PASS 33.50 %
10.0 V AC+DC @ 500.0 kHz	9.9991223	0.0048 %	9.848518	10.151482	-0.0088 %	1.5100 %	PASS 0.58 %
10.0 V AC+DC @ 1.0 MHz	10.077833	0.0048 %	9.848518	10.151482	0.7783 %	1.5100 %	PASS 51.38 %
100.0 V AC+DC @ 1.0 kHz	99.996021	48.18	99.953182	100.046818	-39.792 ppm	420.0 ppm	PASS 8.50 %
100.0 V AC+DC @ 10.0 kHz	99.983261	48.18	99.933182	100.066818	-167.385 ppm	620.0 ppm	PASS 25.05 %
100.0 V AC+DC @ 20.0 kHz	99.959195	48.18	99.933182	100.066818	-408.054 ppm	620.0 ppm	PASS 61.07 %
100.0 V AC+DC @ 50.0 kHz	99.87873	0.0048 %	99.873182	100.126818	-0.1213 %	0.1220 %	PASS 95.62 %
100.0 V AC+DC @ 100.0 kHz	99.800658	0.0048 %	99.693182	100.306818	-0.1993 %	0.3020 %	PASS 64.97 %
700.0 V AC+DC @ 1.0 kHz	699.82145	48.18	699.672274	700.327726	-255.071 ppm	420.0 ppm	PASS 53.52 %

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	6.2781224E-11	71.82 ppm	0	0	Z-check	410 ppm	INFO
50 nADC	5E-08	5.0033283E-08	71.82 ppm	4.997591E-08	5.002409E-08	665.661 ppm	410 ppm	INFO
100 nADC	1E-07	1.0001593E-07	71.82 ppm	9.995182E-08	1.000482E-07	159.308 ppm	410 ppm	PASS 33.06 %
-100 nADC	-1E-07	-9.9927444E-08	71.82 ppm	-1.000482E-07	-9.995182E-08	-725.560 ppm	410 ppm	FAIL 150.59 %
-50 nADC	-5E-08	-4.9963457E-08	71.82 ppm	-5.002409E-08	-4.997591E-08	-730.863 ppm	410 ppm	INFO
Zero µADC	0	1.8625295E-11	71.82 ppm	0	0	Z-check	410 ppm	INFO
0.5 µADC	5E-07	4.9916454E-07	71.82 ppm	4.999391E-07	5.000609E-07	-1670.918 ppm	50 ppm	FAIL 1371.63 %
1.0 µADC	1E-06	9.9922378E-07	71.82 ppm	9.998782E-07	1.000122E-06	-776.216 ppm	50 ppm	FAIL 637.18 %
-1.0 µADC	-1E-06	-1.0008455E-06	71.82 ppm	-1.000122E-06	-9.998782E-07	845.542 ppm	50 ppm	FAIL 694.09 %
-0.5 µADC	-5E-07	-5.0081238E-07	71.82 ppm	-5.000609E-07	-4.999391E-07	1624.767 ppm	50 ppm	FAIL 1333.74 %
Zero 00 µADC	0	5.1750678E-11	71.82 ppm	0	0	Z-check	410 ppm	INFO
5 µADC	5E-06	4.9998822E-06	71.82 ppm	4.999556E-06	5.000444E-06	-23.554 ppm	17 ppm	PASS 26.52 %
10 µADC	1E-05	9.9998684E-06	71.82 ppm	9.999112E-06	1.000089E-05	-13.161 ppm	17 ppm	PASS 14.82 %
-10 µADC	-1E-05	-1.0000139E-05	71.82 ppm	-1.000089E-05	-9.999112E-06	13.917 ppm	17 ppm	PASS 15.67 %
-5 µADC	-5E-06	-5.0001688E-06	71.82 ppm	-5.000444E-06	-4.999556E-06	33.762 ppm	17 ppm	PASS 38.01 %
Zero 000 µADC	0	4.0687993E-11	71.82 ppm	0	0	Z-check	410 ppm	INFO
50 µADC	5E-05	5.0000338E-05	71.82 ppm	4.999561E-05	5.000439E-05	6.755 ppm	16 ppm	PASS 7.69 %
100 µADC	0.0001	0.00010000036	71.82 ppm	9.999122E-05	0.0001000088	3.647 ppm	16 ppm	PASS 4.15 %
-100 µADC	-0.0001	-9.9999581E-05	71.82 ppm	-0.0001000088	-9.999122E-05	-4.194 ppm	16 ppm	PASS 4.78 %
-50 µADC	-5E-05	-4.9999635E-05	71.82 ppm	-5.000439E-05	-4.999561E-05	-7.300 ppm	16 ppm	PASS 8.31 %
Zero mADC	0	1.42735E-11	33.64 ppm	0	0	Z-check	410 ppm	INFO
0.5 mADC	0.0005	0.00049999529	33.64 ppm	0.0004999762	0.0005000238	-9.428 ppm	14 ppm	PASS 19.79 %
1.0 mADC	0.001	0.00099999602	33.64 ppm	0.0009999524	0.001000048	-3.977 ppm	14 ppm	PASS 8.35 %
-1.0 mADC	-0.001	-0.0010000045	33.64 ppm	-0.001000048	-0.0009999524	4.481 ppm	14 ppm	PASS 9.40 %
-0.5 mADC	-0.0005	-0.00050000417	33.64 ppm	-0.0005000238	-0.0004999762	8.348 ppm	14 ppm	PASS 17.52 %
Zero 00 mADC	0	4.6098809E-11	32.27 ppm	0	0	Z-check	410 ppm	INFO
5 mADC	0.005	0.0049998732	32.27 ppm	0.004999769	0.005000231	-25.359 ppm	14 ppm	PASS 54.81 %
10 mADC	0.01	0.0099998698	32.27 ppm	0.009999537	0.01000046	-13.023 ppm	14 ppm	PASS 28.15 %
-10 mADC	-0.01	-0.010000111	32.27 ppm	-0.01000046	-0.009999537	11.056 ppm	14 ppm	PASS 23.89 %
-5 mADC	-0.005	-0.0050001127	32.27 ppm	-0.005000231	-0.004999769	22.539 ppm	14 ppm	PASS 48.71 %
Zero 000 mADC	0	7.3671959E-11	53.32 ppm	0	0	Z-check	410 ppm	INFO
50 mADC	0.05	0.050000164	53.32 ppm	0.04999588	0.05000412	3.282 ppm	29 ppm	PASS 3.99 %
100 mADC	0.1	0.10000047	53.32 ppm	0.09999177	0.1000082	4.747 ppm	29 ppm	PASS 5.77 %
-100 mADC	-0.1	-0.10000139	53.32 ppm	-0.1000082	-0.09999177	13.873 ppm	29 ppm	PASS 16.85 %
-50 mADC	-0.05	-0.050000813	53.32 ppm	-0.05000412	-0.04999588	16.251 ppm	29 ppm	PASS 19.74 %
Zero ADC	0	1.1844177E-10	115.22 ppm	0	0	Z-check	410 ppm	INFO
0.5 ADC	0.5	0.50003048	115.22 ppm	0.4998874	0.5001126	60.964 ppm	110 ppm	PASS 27.07 %
1.0 ADC	1	0.99999157	115.22 ppm	0.9997748	1.000225	-8.432 ppm	110 ppm	PASS 3.74 %
-1.0 ADC	-1	-1.0000445	115.22 ppm	-1.000225	-0.9997748	44.500 ppm	110 ppm	PASS 19.76 %
-0.5 ADC	-0.5	-0.50009284	115.22 ppm	-0.5001126	-0.4998874	185.678 ppm	110 ppm	PASS 82.44 %

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	1.0273376E-05	0.0165 %	9.9893455e-06	1.00106545e-05	27337.597 ppm	0.0900 %	INFO
100 µA AC @ 50 Hz	0.0001	0.00010010514	165.45	9.9893455e-05	0.000100106545	1051.377 ppm	900.0 ppm	PASS 98.68 %
1.0 mA AC @ 50 Hz	0.001	0.0010001241	0.0165 %	0.00099903455	0.00100096545	124.087 ppm	0.0800 %	PASS 12.85 %
10 mA AC @ 50 Hz	0.01	0.01000081	0.0165 %	0.0099903455	0.0100096545	81.000 ppm	0.0800 %	PASS 8.39 %
100 mA AC @ 50 Hz	0.1	0.10001394	0.0138 %	0.099906182	0.100093818	139.423 ppm	0.0800 %	PASS 14.86 %
1.0 A AC @ 50 Hz	1.0	1.0003521	0.0138 %	0.99886182	1.00113818	0.0352 %	0.1000 %	PASS 30.93 %
10 µA AC @ 60 Hz	1e-05	1.0035689E-05	0.0138 %	9.9896182e-06	1.00103818e-05	3568.862 ppm	0.0900 %	INFO
100 µA AC @ 60 Hz	0.0001	0.00010002254	0.0138 %	9.9896182e-05	0.000100103818	225.365 ppm	0.0900 %	PASS 21.71 %
1.0 mA AC @ 60 Hz	0.001	0.0010001344	0.0134 %	0.00099906636	0.00100093364	134.392 ppm	0.0800 %	PASS 14.39 %
10 mA AC @ 60 Hz	0.01	0.010001115	0.0134 %	0.0099906636	0.0100093364	111.548 ppm	0.0800 %	PASS 11.95 %
100 mA AC @ 60 Hz	0.1	0.10001737	0.0308 %	0.099889182	0.100110818	173.701 ppm	0.0800 %	PASS 15.67 %
1.0 A AC @ 60 Hz	1.0	1.0003658	0.0308 %	0.99869182	1.00130818	0.0366 %	0.1000 %	PASS 27.96 %
10 µA AC @ 1.0 kHz	1e-05	1.0023092E-05	0.0165 %	9.9893455e-06	1.00106545e-05	2309.189 ppm	0.0900 %	INFO
100 µA AC @ 1.0 kHz	0.0001	9.9982305E-05	0.0165 %	9.9893455e-05	0.000100106545	-176.951 ppm	0.0900 %	PASS 16.61 %
1.0 mA AC @ 1.0 kHz	0.001	0.0010001523	0.0165 %	0.00099933455	0.00100066545	152.302 ppm	0.0500 %	PASS 22.89 %
10 mA AC @ 1.0 kHz	0.01	0.010001551	0.0165 %	0.0099933455	0.0100066545	155.147 ppm	0.0500 %	PASS 23.31 %
100 mA AC @ 1.0 kHz	0.1	0.10002177	0.0138 %	0.099936182	0.100063818	217.710 ppm	0.0500 %	PASS 34.11 %
1.0 A AC @ 1.0 kHz	1.0	1.0002418	0.0138 %	0.99866182	1.00133818	0.0242 %	0.1200 %	PASS 18.07 %

Test completed

Test date	03 October 2018 12:45
UUT Internal TEMP?	36.0
Destructive overloads?	151, DESTRUCTIVE OVERLOADS valid 2941

Lab temperature maintained +24°C ±2°C

Internal use only

Not validated

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