

Manufacturer	HEWLETT-PACKARD	Calibration date	January 20 2018
Model Number	3457A	Ambient Temperature	24.42 °C
Serial	0000	Relative Humidity	41.00 %
ID Number	X	Pressure	1025.28
Notes	Pre-cal check GPIB3	Test type	PERFVAL

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

Reference standard	Mfg	Model	Options	Serial / Unc	CEID	Calibration date	Due date
CAL MFC	Fluke	5700A	/03 WB	XXX	CC1	2017/11/14	2018/11/14
DC STD	Fluke	732B-3	9.9999288 VDC	± 0.56ppm	SV03	2017/11/03	2018/11/03
STDR	IET	1 Ohm	0.99997483	± 0.17ppm	SM02	2017/11/3	2018/11/3
STDR	ESI	SR104	10000.0530 KΩ	± 0.15ppm	SM01	2017/10/30	2018/10/30

MFC last calibrated	67.0 days ago	MFC since DCV ZERO	0.0 days ago
MFC since WBFLAT	1970.0 days ago	MFC since WBGAIN	67.0 days ago
MFC Confidence level	24h 95%	MFC Calibrate date	2017-11-14 00:00:00
MFC Calibrate date Zero	2018-01-20 00:00:00	Calibrate date WB Flatness	2012-08-28 00:00:00
Calibrate date WB Gain	2017-11-14 00:00:00	CAL CONST 6.5V reference voltage	6.89136229218
CAL CONST 13V reference voltage	13.7948180303	CAL CONST 22V range positive zero	398.1787
CAL CONST 22V range negative zero	398.17842	CAL CONST DAC Linearity	0.0
CAL CONST 10KOHM true output resistance	10000.0784402	CAL CONST 10KOHM standard resistance	10000.4260101
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	HP3457A	Last calibration date	UNKNOWN
Next calibration date	1/20/2018	Test date	20 January 2018 12:42
DUT Internal TEMP?	NONE	DUT Calibrations number?	39
Self-test result?	338.0	ACAL ALL result?	NO ACAL
Firmware	6.0000000E+00, 0.0000000E+00	Options	0.0

Service information

Line freq
60.0
CAL DUMP
␣
Reference
F5700 pre-cal 3457 test
DUT Condition
Front used 4W

Test procedure : \$Id: hp3457a.py | Rev 461 | 2018/01/21 06:02:52 clu \$

Source procedure : \$Id: f5700a.py | Rev 458 | 2018/01/20 10:39:16 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 corrected 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	Units	Deviation	DUT Spec	Test Status
Short 00 mVDC	0.0000000E+00	-0.0000006	8.2 ppm	-0.000001	-0.000001	VDC	N/A	3.85 µV	PASS
Short 000 mVDC	0.0000000E+00	-0.0000009	4.0 ppm	-0.000001	-0.000001	VDC	N/A	4.00 µV	PASS
Short 0.0 VDC	0.0000000E+00	-0.0000010	3.3 ppm	-0.000001	-0.000001	VDC	N/A	7.00 µV	PASS
Short 00.0 VDC	0.0000000E+00	-0.0000100	4.4 ppm	-0.000010	-0.000010	VDC	N/A	20.00 µV	PASS
Short 000.0 VDC	0.0000000E+00	0.0000000	6.5 ppm	0.000000	0.000000	VDC	N/A	0.70 mV	PASS
DCV Test	0.1V-1000V	DUT	Source unc.	Low Limit	Hi limit	Units	Measured	24hr	Result
0.03 VDC (0.03 Range)	0.030000	0.02999971	3.81 ppm	0.0299973747	0.0300026253	VDC	-9.633 ppm	83.70 ppm	PASS 11.01 %
-0.03 VDC (0.03 Range)	-0.030000	-0.03000172	3.81 ppm	-0.0300026253	-0.0299973747	VDC	57.367 ppm	83.70 ppm	PASS 65.55 %
1.0 VDC (3.00 Range)	1.000000	1.00002100	1.47 ppm	0.99999333	1.00000667	VDC	21.000 ppm	5.20 ppm	FAIL 314.84 %
2.0 VDC (3.00 Range)	2.000000	2.00004200	1.47 ppm	1.99998666	2.00001334	VDC	21.000 ppm	5.20 ppm	FAIL 314.84 %
3.0 VDC (3.00 Range)	3.000000	3.00006300	1.47 ppm	2.99997999	3.00002001	VDC	21.000 ppm	5.20 ppm	FAIL 314.84 %
-1.0 VDC (3.00 Range)	-1.000000	-1.00001900	1.47 ppm	-1.00000667	-0.99999333	VDC	19.000 ppm	5.20 ppm	FAIL 284.86 %
-2.0 VDC (3.00 Range)	-2.000000	-2.00004100	1.47 ppm	-2.00001334	-1.99998666	VDC	20.500 ppm	5.20 ppm	FAIL 307.35 %
-3.0 VDC (3.00 Range)	-3.000000	-3.00006900	1.47 ppm	-3.00002001	-2.99997999	VDC	23.000 ppm	5.20 ppm	FAIL 344.83 %
10 VDC (30.00 Range)	10.000000	10.00017900	2.36 ppm	9.9998814	10.0001186	VDC	17.900 ppm	9.50 ppm	FAIL 150.93 %
20 VDC (30.00 Range)	20.000000	20.00035800	2.36 ppm	19.9997628	20.0002372	VDC	17.900 ppm	9.50 ppm	FAIL 150.93 %
30 VDC (30.00 Range)	30.000000	30.00050000	2.36 ppm	29.9996442	30.0003558	VDC	16.667 ppm	9.50 ppm	FAIL 140.53 %
-10 VDC (30.00 Range)	-10.000000	-10.00015900	2.36 ppm	-10.0001186	-9.9998814	VDC	15.900 ppm	9.50 ppm	FAIL 134.06 %
-20 VDC (30.00 Range)	-20.000000	-20.00035800	2.36 ppm	-20.0002372	-19.9997628	VDC	17.900 ppm	9.50 ppm	FAIL 150.93 %
-30 VDC (30.00 Range)	-30.000000	-30.00064900	2.36 ppm	-30.0003558	-29.9996442	VDC	21.633 ppm	9.50 ppm	FAIL 182.41 %
100 VDC (300.00 Range)	100.000000	100.00119000	2.85 ppm	99.996385	100.003615	VDC	11.900 ppm	33.30 ppm	PASS 32.92 %
200 VDC (300.00 Range)	200.000000	200.00299000	2.85 ppm	199.99277	200.00723	VDC	14.950 ppm	33.30 ppm	PASS 41.36 %
300 VDC (300.00 Range)	300.000000	300.00690000	2.85 ppm	299.989155	300.010845	VDC	23.000 ppm	33.30 ppm	PASS 63.62 %
-100 VDC (300.00 Range)	-100.000000	-100.00100000	2.85 ppm	-100.003615	-99.996385	VDC	10.000 ppm	33.30 ppm	PASS 27.66 %
-200 VDC (300.00 Range)	-200.000000	-200.00290000	2.85 ppm	-200.00723	-199.99277	VDC	14.500 ppm	33.30 ppm	PASS 40.11 %
-300 VDC (300.00 Range)	-300.000000	-300.00720000	2.85 ppm	-300.007245	-299.992755	VDC	24.000 ppm	33.30 ppm	PASS 99.38 %

Additional test for **combined DUT+MFC** DC Voltage Integral Linearity (INL) using fixed 22V range. Integral linearity is a measure of the device's deviation from ideal linear behaviour.

DCV Linearity	30V Range	DUT	Source unc.	Low Limit	Hi limit	Units	Measured	24hr	Result
10.999998	10.99999800	11.00020000	1.47 ppm	10.999924630	11.000071370	VDC	18.364 ppm	5.20 ppm	FAIL 275.32 %
9.999999	9.99999900	10.00019000	1.47 ppm	9.999932300	10.000065700	VDC	19.100 ppm	5.20 ppm	FAIL 286.36 %
8.888888	8.88888800	8.88904000	1.47 ppm	8.888828711	8.888947289	VDC	17.100 ppm	5.20 ppm	FAIL 256.37 %
7.777777	7.77777700	7.77792980	1.47 ppm	7.777725122	7.777828878	VDC	19.646 ppm	5.20 ppm	FAIL 294.54 %
6.666666	6.66666600	6.66677990	1.47 ppm	6.66621533	6.666710467	VDC	17.085 ppm	5.20 ppm	FAIL 256.15 %
5.555555	5.55555500	5.55565980	1.47 ppm	5.555517944	5.555592056	VDC	18.864 ppm	5.20 ppm	FAIL 282.82 %
4.444444	4.44444400	4.44450990	1.47 ppm	4.444414356	4.444473644	VDC	14.828 ppm	5.20 ppm	FAIL 222.30 %
3.333333	3.33333300	3.33338990	1.47 ppm	3.333310767	3.333355233	VDC	17.070 ppm	5.20 ppm	FAIL 255.92 %
2.222222	2.22222200	2.22227000	1.47 ppm	2.222207178	2.222236822	VDC	21.600 ppm	5.20 ppm	FAIL 323.84 %
1.111111	1.11111100	1.11112990	2.45 ppm	1.111102500	1.111119500	VDC	17.010 ppm	5.20 ppm	FAIL 222.35 %
0.123456789	0.12345679	0.12345999	9.91 ppm	0.123454924	0.123458654	VDC	25.928 ppm	5.20 ppm	FAIL 171.60 %
-0.123456789	-0.12345679	-0.12344999	9.91 ppm	-0.123458654	-0.123454924	VDC	-55.072 ppm	5.20 ppm	FAIL 364.47 %
-1.111111	-1.11111100	-1.11112990	2.45 ppm	-1.111119500	-1.111102500	VDC	17.010 ppm	5.20 ppm	FAIL 222.35 %
-2.222222	-2.22222200	-2.22225990	1.47 ppm	-2.222236822	-2.222207178	VDC	17.055 ppm	5.20 ppm	FAIL 255.70 %
-3.333333	-3.33333300	-3.33337990	1.47 ppm	-3.333355233	-3.333310767	VDC	14.070 ppm	5.20 ppm	FAIL 210.94 %
-4.444444	-4.44444400	-4.44449990	1.47 ppm	-4.444473644	-4.444414356	VDC	12.578 ppm	5.20 ppm	FAIL 188.57 %
-5.555555	-5.55555500	-5.55563980	1.47 ppm	-5.555592056	-5.555517944	VDC	15.264 ppm	5.20 ppm	FAIL 228.85 %
-6.666666	-6.66666600	-6.66676990	1.47 ppm	-6.666710467	-6.666621533	VDC	15.585 ppm	5.20 ppm	FAIL 233.66 %
-7.777777	-7.77777700	-7.77789980	1.47 ppm	-7.777828878	-7.777725122	VDC	15.789 ppm	5.20 ppm	FAIL 236.71 %
-8.888888	-8.88888800	-8.88903990	1.47 ppm	-8.888947289	-8.888828711	VDC	17.089 ppm	5.20 ppm	FAIL 256.20 %
-9.999999	-9.99999900	-10.00015900	1.47 ppm	-10.000065700	-9.999932300	VDC	16.000 ppm	5.20 ppm	FAIL 239.88 %
-10.999998	-10.99999800	-11.00018900	1.47 ppm	-11.000071370	-10.999924630	VDC	17.364 ppm	5.20 ppm	FAIL 260.32 %

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	Units	Measured	24h spec	Result
1 Ω	9.99797400E-01	0.99967667	40.20 ppm	0.999692221314	0.999902578686	Ω	-120.758 ppm	65.00 ppm	FAIL 114.79 %
1.9 Ω	1.89952320E+00	1.8993333	8.30 ppm	1.89938396495	1.89966243505	Ω	-99.955 ppm	65.00 ppm	FAIL 136.36 %
10 Ω	9.99990400E+00	9.9999367	8.30 ppm	9.99917100704	10.000636993	Ω	3.267 ppm	65.00 ppm	PASS 4.46 %
19 Ω	1.89990950E+01	18.99904	4.30 ppm	18.9977783627	19.0004116373	Ω	-2.895 ppm	65.00 ppm	PASS 4.18 %
100 Ω	1.00001630E+02	100.00203	4.30 ppm	99.9977999376	100.005460062	Ω	4.033 ppm	34.00 ppm	PASS 10.53 %
190 Ω	1.89995000E+02	189.99533	3.30 ppm	189.987913187	190.002086814	Ω	1.754 ppm	34.00 ppm	PASS 4.70 %
1.0 kΩ	9.99990500E+02	1000.003	3.30 ppm	999.952200364	1000.02879964	Ω	12.500 ppm	35.00 ppm	PASS 32.64 %
1.9 kΩ	1.89999610E+03	1900.0177	3.30 ppm	1899.92333015	1900.06886985	Ω	11.351 ppm	35.00 ppm	PASS 29.64 %
10 kΩ	1.00000680E+04	10000.1	3.30 ppm	9999.6849974	10000.4510026	Ω	3.200 ppm	35.00 ppm	PASS 8.36 %
19 kΩ	1.89996850E+04	18999.74	3.30 ppm	18998.9573121	19000.4126879	Ω	2.895 ppm	35.00 ppm	PASS 7.56 %
100 kΩ	1.00001210E+05	100002.17	3.30 ppm	99996.8799476	100005.540052	Ω	9.567 ppm	40.00 ppm	PASS 22.09 %
190 kΩ	1.89992720E+05	189994.63	5.30 ppm	189984.11333	190001.32667	Ω	10.071 ppm	40.00 ppm	PASS 22.23 %
1.0 MΩ	9.99999900E+05	999992.33	5.30 ppm	999949.600005	1000050.19999	Ω	-7.567 ppm	45.00 ppm	PASS 15.04 %
1.9 MΩ	1.89995530E+06	1899942.7	14.30 ppm	1899842.63265	1900067.96735	Ω	-6.649 ppm	45.00 ppm	PASS 11.21 %
10 MΩ	9.99936600E+06	9999620	14.30 ppm	9996723.16757	10002008.8324	Ω	25.402 ppm	250.00 ppm	PASS 9.61 %
19 MΩ	1.89990250E+07	18999773	60.30 ppm	18993129.6025	19004920.3975	Ω	39.388 ppm	250.00 ppm	PASS 12.69 %
100 MΩ	1.00008260E+08	1.00423E+08	60.30 ppm	99842216.2859	100174303.714	Ω	4147.057 ppm	1600.00 ppm	FAIL 249.78 %
OHM Test	10 Ω, 10 KΩ ZERO	DUT	Source unc.	Low Limit	Hi limit	Units	Measured	24h spec	Result
30R REAR Ω	1.00000000E-06	-176.6667 μΩ	50.000 μΩ	4.9999935e-05	5.0000065e-05	Ω	N/A	65.00 ppm	FAIL 0.00 %
30K REAR Ω	1.00000000E-06	10000.0000 μΩ	50.000 μΩ	4.9999935e-05	5.0000065e-05	Ω	N/A	35.00 ppm	FAIL 0.03 %

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	3V-30V	DUT	w/Guardband	Low Limit	Hi limit	Units	Measured	24h spec	Result
3.0 VAC @ 50.0 kHz	3.0	2.994545	0.0129 %	2.98155273	3.01844727	VAC	-0.1818 %	0.6020 %	PASS 29.57 %
3.0 VAC @ 1.0 MHz	3.0	2.997461	0.2500 %	2.6892	3.3108	VAC	-0.0846 %	10.1100 %	PASS 0.82 %
30 VAC @ 10 Hz	30	29.69236	0.2085 %	29.57625	30.42375	VAC	-1.0255 %	1.2040 %	PASS 72.60 %
30 VAC @ 200 Hz	30	29.99129	73.18	29.9732046	30.0267954	VAC	-290.333 ppm	820.0 ppm	PASS 32.51 %
30 VAC @ 500 Hz	30	29.99233	73.18	29.9732046	30.0267954	VAC	-255.667 ppm	820.0 ppm	PASS 28.62 %
30 VAC @ 50.0 kHz	30	29.95256	0.0129 %	29.8155273	30.1844727	VAC	-0.1581 %	0.6020 %	PASS 25.72 %
30 VAC @ 1.0 MHz	30	29.95264	0.3000 %	26.877	33.123	VAC	-0.1579 %	10.1100 %	PASS 1.52 %

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	Units	Measured	24h spec	Result, % spec
0.03 VAC @ 10 Hz	0.02992272	0.0140 %	0.029567	0.030433	VAC	-0.2576 %	1.4300 %	PASS 17.84 %
0.03 VAC @ 20 Hz	0.03012914	0.0140 %	0.029567	0.030433	VAC	0.4305 %	1.4300 %	PASS 29.81 %
0.03 VAC @ 40 Hz	0.03020045	0.0140 %	0.029567	0.030433	VAC	0.6682 %	1.4300 %	PASS 46.27 %
0.03 VAC @ 100 Hz	0.03021372	140.45	0.029968	0.030032	VAC	7124.000 ppm	910.0 ppm	FAIL 678.19 %
0.03 VAC @ 1.0 kHz	0.03021676	140.45	0.029968	0.030032	VAC	7225.333 ppm	910.0 ppm	FAIL 687.83 %
0.03 VAC @ 10.0 kHz	0.0302137	140.45	0.029971	0.030029	VAC	7123.333 ppm	810.0 ppm	FAIL 749.47 %
0.03 VAC @ 20.0 kHz	0.03021466	140.45	0.029971	0.030029	VAC	7155.333 ppm	810.0 ppm	FAIL 752.84 %
0.03 VAC @ 50.0 kHz	0.03015913	0.0140 %	0.029812	0.030188	VAC	0.5304 %	0.6110 %	PASS 84.86 %
0.03 VAC @ 100.0 kHz	0.0301086	0.0345 %	0.029806	0.030194	VAC	0.3620 %	0.6110 %	PASS 56.08 %
0.03 VAC @ 300.0 kHz	0.02987621	0.0886 %	0.029037	0.030963	VAC	-0.4126 %	3.1200 %	PASS 12.86 %
0.03 VAC @ 500.0 kHz	0.02991935	0.1100 %	0.026922	0.033078	VAC	-0.2688 %	10.1500 %	PASS 2.62 %
0.03 VAC @ 1.0 MHz	0.03052556	0.1700 %	0.026904	0.033096	VAC	1.7519 %	10.1500 %	PASS 16.98 %
0.3 VAC @ 10 Hz	0.2970905	0.3500 %	0.294660	0.305340	VAC	-0.9698 %	1.4300 %	PASS 54.49 %
0.3 VAC @ 20 Hz	0.2992824	0.0073 %	0.295688	0.304312	VAC	-0.2392 %	1.4300 %	PASS 16.64 %
0.3 VAC @ 40 Hz	0.2998762	0.0073 %	0.295688	0.304312	VAC	-0.0413 %	1.4300 %	PASS 2.87 %
0.3 VAC @ 100 Hz	0.3000557	73.18	0.299705	0.300295	VAC	185.667 ppm	910.0 ppm	PASS 18.88 %
0.3 VAC @ 1.0 kHz	0.300083	73.18	0.299705	0.300295	VAC	276.667 ppm	910.0 ppm	PASS 28.14 %
0.3 VAC @ 10.0 kHz	0.3000645	73.18	0.299735	0.300265	VAC	215.000 ppm	810.0 ppm	PASS 24.34 %
0.3 VAC @ 20.0 kHz	0.300075	73.18	0.299735	0.300265	VAC	250.000 ppm	810.0 ppm	PASS 28.31 %
0.3 VAC @ 50.0 kHz	0.2998535	0.0073 %	0.298145	0.301855	VAC	-0.0488 %	0.6110 %	PASS 7.90 %
0.3 VAC @ 100.0 kHz	0.2992744	0.0073 %	0.298145	0.301855	VAC	-0.2419 %	0.6110 %	PASS 39.12 %
0.3 VAC @ 300.0 kHz	0.2975138	0.0129 %	0.290601	0.309399	VAC	-0.8287 %	3.1200 %	PASS 26.45 %
0.3 VAC @ 500.0 kHz	0.2989198	0.0266 %	0.269470	0.330530	VAC	-0.3601 %	10.1500 %	PASS 3.54 %
0.3 VAC @ 1.0 MHz	0.3110671	0.0468 %	0.269410	0.330590	VAC	3.6890 %	10.1500 %	PASS 36.18 %
1.0 VAC @ 10 Hz	0.989722	0.1200 %	0.984760	1.015240	VAC	-1.0278 %	1.4040 %	PASS 67.44 %
1.0 VAC @ 20 Hz	0.996977	0.2500 %	0.983460	1.016540	VAC	-0.3023 %	1.4040 %	PASS 18.28 %
1.0 VAC @ 40 Hz	0.998957	0.0073 %	0.985887	1.014113	VAC	-0.1043 %	1.4040 %	PASS 7.39 %
1.0 VAC @ 100 Hz	0.999536	73.18	0.999107	1.000893	VAC	-464.000 ppm	820.0 ppm	PASS 51.95 %
1.0 VAC @ 1.0 kHz	0.999673	73.18	0.999107	1.000893	VAC	-327.000 ppm	820.0 ppm	PASS 36.61 %
1.0 VAC @ 10.0 kHz	0.999443	73.18	0.999207	1.000793	VAC	-557.000 ppm	720.0 ppm	PASS 70.22 %
1.0 VAC @ 20.0 kHz	0.999264	73.18	0.999207	1.000793	VAC	-736.000 ppm	720.0 ppm	PASS 92.79 %
1.0 VAC @ 50.0 kHz	0.997989	0.0073 %	0.993907	1.006093	VAC	-0.2011 %	0.6020 %	PASS 33.00 %
1.0 VAC @ 100.0 kHz	0.995002	0.0073 %	0.993907	1.006093	VAC	-0.4998 %	0.6020 %	PASS 82.03 %
1.0 VAC @ 300.0 kHz	0.984718	0.0073 %	0.968827	1.031173	VAC	-1.5282 %	3.1100 %	PASS 49.02 %
1.0 VAC @ 500.0 kHz	0.982944	0.0129 %	0.898771	1.101229	VAC	-1.7056 %	10.1100 %	PASS 16.85 %
1.0 VAC @ 1.0 MHz	0.989386	0.0266 %	0.898634	1.101366	VAC	-1.0614 %	10.1100 %	PASS 10.47 %
30 VAC @ 10 Hz	29.69273	0.0468 %	29.624754	30.375246	VAC	-1.0242 %	1.2040 %	PASS 81.88 %
30 VAC @ 20 Hz	29.91129	0.1200 %	29.602800	30.397200	VAC	-0.2957 %	1.2040 %	PASS 22.33 %
30 VAC @ 40 Hz	29.97118	0.2500 %	29.563800	30.436200	VAC	-0.0961 %	1.2040 %	PASS 6.61 %
30 VAC @ 100 Hz	29.98873	73.18	29.973205	30.026795	VAC	-375.667 ppm	820.0 ppm	PASS 42.06 %
30 VAC @ 1.0 kHz	29.99282	73.18	29.973205	30.026795	VAC	-239.333 ppm	820.0 ppm	PASS 26.80 %
30 VAC @ 10.0 kHz	29.98597	73.18	29.976205	30.023795	VAC	-467.667 ppm	720.0 ppm	PASS 58.96 %
30 VAC @ 20.0 kHz	29.98125	73.18	29.976205	30.023795	VAC	-625.000 ppm	720.0 ppm	PASS 78.80 %
30 VAC @ 50.0 kHz	29.95251	0.0073 %	29.817205	30.182795	VAC	-0.1583 %	0.6020 %	PASS 25.98 %
30 VAC @ 100.0 kHz	29.87054	0.0073 %	29.817205	30.182795	VAC	-0.4315 %	0.6020 %	PASS 70.82 %
30 VAC @ 300.0 kHz	29.64967	0.0073 %	29.064805	30.935195	VAC	-1.1678 %	3.1100 %	PASS 37.46 %
30 VAC @ 500.0 kHz	29.7315	0.0073 %	26.964805	33.035195	VAC	-0.8950 %	10.1100 %	PASS 8.85 %
30 VAC @ 1.0 MHz	29.73149	0.0129 %	26.963127	33.036873	VAC	-0.8950 %	10.1100 %	PASS 8.84 %
300.0 VAC @ 1.0 kHz	299.8967	0.0248 %	299.289546	300.710454	VAC	-0.0344 %	0.2120 %	PASS 14.52 %
300.0 VAC @ 10.0 kHz	299.8981	0.0577 %	299.400810	300.599190	VAC	-0.0340 %	0.1420 %	PASS 16.98 %
300.0 VAC @ 20.0 kHz	299.8994	0.1400 %	299.154000	300.846000	VAC	-0.0335 %	0.1420 %	PASS 11.88 %
300.0 VAC @ 50.0 kHz	299.9007	0.3000 %	296.094000	303.906000	VAC	-0.0331 %	1.0020 %	PASS 2.54 %
300.0 VAC @ 100.0 kHz	299.8999	0.0073 %	269.972046	330.027954	VAC	-0.0334 %	10.0020 %	PASS 0.33 %
300.0 VAC @ 1.0 kHz	299.8999	0.0073 %	299.342046	300.657954	VAC	-0.0334 %	0.2120 %	PASS 15.19 %

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	Units	Measured	24h spec	Result
300 nADC	3E-07	3.1480001E-07	71.36 ppm	2.98838592e-07	3.01161408e-07	ADC	4.9333 %	3800.00 ppm	INFO 1274.32 %
-300 nADC	-3E-07	-2.852E-07	71.36 ppm	-3.01161408e-07	-2.98838592e-07	ADC	-4.9333 %	3800.00 ppm	INFO 1274.32 %
3 µADC	3E-06	3.0151002E-06	71.36 ppm	2.98838592e-06	3.01161408e-06	ADC	0.5033 %	3800.00 ppm	INFO 130.02 %
-3 µADC	-3E-06	-2.9855001E-06	71.36 ppm	-3.01161408e-06	-2.98838592e-06	ADC	-0.4833 %	3800.00 ppm	INFO 124.85 %
30 µADC	3E-05	3.00181E-05	71.36 ppm	2.98838592e-05	3.01161408e-05	ADC	0.0603 %	3800.00 ppm	PASS 15.58 %
-30 µADC	-3E-05	-2.99884E-05	71.36 ppm	-3.01161408e-05	-2.98838592e-05	ADC	-0.0387 %	3800.00 ppm	PASS 9.99 %
300 µADC	0.0003	0.00030014329	71.36 ppm	0.000298838592	0.000301161408	ADC	0.0478 %	3800.00 ppm	PASS 12.34 %
-300 µADC	-0.0003	-0.0002999211	71.36 ppm	-0.000301161408	-0.000298838592	ADC	-0.0263 %	3800.00 ppm	PASS 6.79 %
3.0 mADC	0.003	0.0030005951	38.63 ppm	0.00299977011	0.00300022989	ADC	198.367 ppm	38.00 ppm	FAIL 258.86 %
-3.0 mADC	-0.003	-0.0030002189	38.63 ppm	-0.00300022989	-0.00299977011	ADC	72.967 ppm	38.00 ppm	PASS 95.22 %
30 mADC	0.03	0.030004797	38.63 ppm	0.0299977011	0.0300022989	ADC	159.900 ppm	38.00 ppm	FAIL 208.67 %
-30 mADC	-0.03	-0.0300042	38.63 ppm	-0.0300022989	-0.0299977011	ADC	140.000 ppm	38.00 ppm	FAIL 182.70 %
300 mADC	0.3	0.30002989	48.63 ppm	0.299949111	0.300050889	ADC	99.633 ppm	121.00 ppm	PASS 58.74 %
-300 mADC	-0.3	-0.3000293	48.63 ppm	-0.300050889	-0.299949111	ADC	97.667 ppm	121.00 ppm	PASS 57.58 %
1.0 ADC	1	1.000496	71.36 ppm	0.99969064	1.00030936	ADC	496.000 ppm	238.00 ppm	FAIL 160.33 %
-1.0 ADC	-1	-1.0004409	71.36 ppm	-1.00030936	-0.99969064	ADC	440.900 ppm	238.00 ppm	FAIL 142.52 %

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	1 μ A-1A	DUT	Source unc.	Low Limit	Hi limit	Units	Measured	24h spec	Result, % spec
3.0 mA AC @ 50 Hz	0.003	0.00300307	0.0139 %	0.002991183	0.003008817	AAC	0.1023 %	0.2800 %	PASS 34.82 %
30 mA AC @ 50 Hz	0.03	0.02998924	0.0139 %	0.02991183	0.03008817	AAC	-0.0359 %	0.2800 %	PASS 12.20 %
300 mA AC @ 50 Hz	0.3	0.300104	0.0619 %	0.2995743	0.3004257	AAC	346.667 ppm	0.0800 %	PASS 24.43 %
3.0 mA AC @ 60 Hz	0.003	0.0030039	0.0139 %	0.002991183	0.003008817	AAC	0.1300 %	0.2800 %	PASS 44.23 %
30 mA AC @ 60 Hz	0.03	0.02999304	0.0139 %	0.02991183	0.03008817	AAC	-0.0232 %	0.2800 %	PASS 7.89 %
300 mA AC @ 60 Hz	0.3	0.300148	0.0619 %	0.2995743	0.3004257	AAC	493.333 ppm	0.0800 %	PASS 34.77 %
3.0 mA AC @ 1000.0 Hz	0.003	0.00300428	0.0139 %	0.002992083	0.003007917	AAC	0.1427 %	0.2500 %	PASS 54.06 %
30 mA AC @ 1000.0 Hz	0.03	0.03000041	0.0139 %	0.02992083	0.03007917	AAC	0.0014 %	0.2500 %	PASS 0.52 %
300 mA AC @ 1000.0 Hz	0.3	0.300244	0.0619 %	0.2996643	0.3003357	AAC	813.333 ppm	0.0500 %	PASS 72.68 %

Test date	20 January 2018 17:10
UUT Internal TEMP?	NONE

Lab temperature maintained +24°C ±2°C

Internal use only

Not validated

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