

Manufacturer	AGILENT	Calibration date	October 19 2018
Model Number	34401A	Ambient Temperature	22.39 °C
Serial	US36111998	Relative Humidity	56.7 %
ID Number	Erik-34401A	Pressure	1005.62
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	Fluke	5720A	03/HLK	E2E6	XC01	10/18/2018	01/18/2019
DMM	HP	3458A	001,X02	X	XD3	07/25/2018	01/25/2019
DC STD	xDevs.com	792X[2]	9.9999854 VDC	±2.2 ppm	XD01	02/16/2018	02/16/2019
STDR	ESI	SR104	10000.0012 KΩ	±1.00 ppm	XR04	06/30/2018	06/30/2019
STDR	IET	SRL-1	1.00000542 Ω	±2.60 ppm	PR02	09/27/2018	09/27/2019

MFC last calibrated	0.0 days ago	MFC since DCV ZERO	0.0 days ago
MFC since WBFLAT	11248.0 days ago	MFC since WBGAIN	11248.0 days ago
MFC Confidence level	24h 95% REL	MFC Calibrate date	2018-10-19 00:00:00
MFC Calibrate date Zero	2018-10-19 00:00:00	Calibrate date WB Flatness	1988-10-01 00:00:00
Calibrate date WB Gain	1988-10-01 00:00:00	CAL CONST 6.5V reference voltage	6.957482393
CAL CONST 13V reference voltage	13.8552982766	CAL CONST 22V range positive zero	398.17962
CAL CONST 22V range negative zero	398.17901	CAL CONST DAC Linearity	0.0
CAL CONST 10KOHM true output resistance	9999.79024749	CAL CONST 10KOHM standard resistance	9998.74685126
CAL CONST, Zero calibration temperature	22.6000003815	CAL CONST, All calibration temp	22.6000003815

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

Meter Info	HEWLETT-PACKARD,34401A,0,10-5-2	Test date start	19 October 2018 06:39
Test specification interval	24 hour DUT spec	Self-test result?	0,"No error"
Line frequency	110V 60 Hz	Next calibration date	21 JUN 2001
Last calibration date	21 JUN 2000	SCPI Version	N/A
Last calibration temperature	26.6	Calibration count	35.0

Service information

Calibration count	35.0
Calibration string	"21 JUN 2000 26.6C"
Reference	Direct MFC test, PTFE cable set
DUT Condition	test

Test procedure : \$Id: hp34401a.py | Rev 1041 | 2018/10/29 11:39:21 tin_fpga \$

Source procedure : \$Id: f5720a.py | Rev 1039 | 2018/10/29 04:33:02 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	-0.57 µV	8.23 µV	-11.230 µV	11.230 µV	N/A	3.00 µV	PASS
Short 0.0 VDC	0.000000E+00	-1.02 µV	3.95 µV	-9.950 µV	9.950 µV	N/A	6.00 µV	PASS
Short 00.0 VDC	0.000000E+00	-1.30 µV	3.32 µV	-43.320 µV	43.320 µV	N/A	40.00 µV	PASS
Short 000.0 VDC	0.000000E+00	51.00 µV	4.36 µV	-604.360 µV	604.360 µV	N/A	0.60 mV	PASS
Short 0000.0 VDC	0.000000E+00	0.00 µV	6.45 µV	-6006.450 µV	6006.450 µV	N/A	6.00 mV	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	0.10000477	9.91 ppm	0.099993009	0.10000699	47.750 ppm	60.00 ppm	PASS 68.30 %
-0.1 VDC (0.10 Range)	-0.1000000	-0.10000638	9.91 ppm	-0.10000699	-0.099993009	63.750 ppm	60.00 ppm	PASS 91.19 %
0.1 VDC (1.00 Range)	0.1000000	0.10000388	9.91 ppm	0.099996409	0.10000359	38.800 ppm	26.00 ppm	FAIL 108.05 %
0.5 VDC (1.00 Range)	0.5000000	0.50002207	4.05 ppm	0.49998497	0.50001502	44.140 ppm	26.00 ppm	FAIL 146.89 %
1.0 VDC (1.00 Range)	1.0000000	1.0000445	4.05 ppm	0.99996995	1.00003	44.500 ppm	26.00 ppm	FAIL 148.09 %
-0.1 VDC (1.00 Range)	-0.1000000	-0.10000562	9.91 ppm	-0.10000359	-0.099996409	56.200 ppm	26.00 ppm	FAIL 156.50 %
-0.5 VDC (1.00 Range)	-0.5000000	-0.50002437	4.05 ppm	-0.50001502	-0.49998497	48.740 ppm	26.00 ppm	FAIL 162.20 %
-1.0 VDC (1.00 Range)	-1.0000000	-1.0000467	4.05 ppm	-1.00003	-0.99996995	46.700 ppm	26.00 ppm	FAIL 155.41 %
1.0 VDC (10.00 Range)	1.0000000	1.0000444	4.05 ppm	0.99997695	1.0000231	44.400 ppm	19.00 ppm	FAIL 192.62 %
5.0 VDC (10.00 Range)	5.0000000	5.0002238	1.47 ppm	4.9998977	5.0001023	44.760 ppm	19.00 ppm	FAIL 218.66 %
10.0 VDC (10.00 Range)	10.0000000	10.000459	2.36 ppm	9.9997864	10.000214	45.900 ppm	19.00 ppm	FAIL 214.89 %
-1.0 VDC (10.00 Range)	-1.0000000	-1.0000503	4.05 ppm	-1.0000231	-0.99997695	50.300 ppm	19.00 ppm	FAIL 218.22 %
-5.0 VDC (10.00 Range)	-5.0000000	-5.0002361	1.47 ppm	-5.0001023	-4.9998977	47.220 ppm	19.00 ppm	FAIL 230.68 %
-10.0 VDC (10.00 Range)	-10.0000000	-10.000467	2.36 ppm	-10.000214	-9.9997864	46.700 ppm	19.00 ppm	FAIL 218.63 %
10 VDC (100.00 Range)	10.0000000	10.0003	2.36 ppm	9.9997164	10.000284	30.000 ppm	26.00 ppm	FAIL 105.78 %
50 VDC (100.00 Range)	50.0000000	50.001377	5.45 ppm	49.998427	50.001573	27.540 ppm	26.00 ppm	PASS 87.57 %
100 VDC (100.00 Range)	100.0000000	100.00264	5.45 ppm	99.996855	100.00315	26.400 ppm	26.00 ppm	PASS 83.94 %
-10 VDC (100.00 Range)	-10.0000000	-10.000263	2.36 ppm	-10.000284	-9.9997164	26.350 ppm	26.00 ppm	PASS 92.91 %
-50 VDC (100.00 Range)	-50.0000000	-50.001386	5.45 ppm	-50.001573	-49.998427	27.720 ppm	26.00 ppm	PASS 88.14 %
-100 VDC (100.00 Range)	-100.0000000	-100.00264	5.45 ppm	-100.00315	-99.996855	26.400 ppm	26.00 ppm	PASS 83.94 %
100 VDC (1000.00 Range)	100.0000000	100.00264	5.45 ppm	99.996855	100.00315	26.400 ppm	26.00 ppm	PASS 83.94 %
200 VDC (1000.00 Range)	200.0000000	200.00567	5.45 ppm	199.99371	200.00629	28.350 ppm	26.00 ppm	PASS 90.14 %
1000 VDC (1000.00 Range)	1000.0000000	1000.0293	7.55 ppm	999.95645	1000.0435	29.300 ppm	26.00 ppm	PASS 67.28 %
-100 VDC (1000.00 Range)	-100.0000000	-100.00266	5.45 ppm	-100.00315	-99.996855	26.600 ppm	26.00 ppm	PASS 84.58 %
-200 VDC (1000.00 Range)	-200.0000000	-200.00571	5.45 ppm	-200.00629	-199.99371	28.550 ppm	26.00 ppm	PASS 90.78 %
-1000 VDC (1000.00 Range)	-1000.0000000	-1000.0293	7.55 ppm	-1000.0435	-999.95645	29.300 ppm	26.00 ppm	FAIL 124.42 %

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	1.1000487	3.64 ppm	1.099975	1.100025	44.36 ppm	19.00 ppm	FAIL 195.95 %
0.9999999	0.9999999	1.0000443	3.70 ppm	0.999972	1.000023	44.35 ppm	19.00 ppm	FAIL 195.37 %
0.9000000	0.9000000	0.9000399	3.78 ppm	0.8999795	0.9000205	44.29 ppm	19.00 ppm	FAIL 194.42 %
0.8888888	0.8888888	0.8889284	3.79 ppm	0.8888685	0.8889091	44.59 ppm	19.00 ppm	FAIL 195.65 %
0.8000000	0.8000000	0.8000356	3.87 ppm	0.7999817	0.8000183	44.44 ppm	19.00 ppm	FAIL 194.30 %
0.7777777	0.7777777	0.7778123	3.90 ppm	0.7777599	0.7777955	44.54 ppm	19.00 ppm	FAIL 194.49 %
0.7000000	0.7000000	0.7000310	4.00 ppm	0.6999839	0.7000161	44.25 ppm	19.00 ppm	FAIL 192.39 %
0.6666666	0.6666666	0.6666960	4.05 ppm	0.6666512	0.666682	44.18 ppm	19.00 ppm	FAIL 191.65 %
0.6000000	0.6000000	0.6000264	4.17 ppm	0.5999861	0.6000139	44.06 ppm	19.00 ppm	FAIL 190.15 %
0.5555555	0.5555555	0.5555800	4.26 ppm	0.5555426	0.5555684	44.13 ppm	19.00 ppm	FAIL 189.71 %
0.5000000	0.5000000	0.5000221	4.40 ppm	0.4999883	0.5000117	44.13 ppm	19.00 ppm	FAIL 188.59 %
0.4444444	0.4444444	0.4444639	4.58 ppm	0.4444339	0.4444549	43.92 ppm	19.00 ppm	FAIL 186.26 %
0.4000000	0.4000000	0.4000176	4.75 ppm	0.3999905	0.4000095	43.89 ppm	19.00 ppm	FAIL 184.79 %
0.3333333	0.3333333	0.3333476	5.10 ppm	0.3333253	0.3333413	43.01 ppm	19.00 ppm	FAIL 178.44 %
0.3000000	0.3000000	0.3000129	5.33 ppm	0.2999927	0.3000073	42.92 ppm	19.00 ppm	FAIL 176.39 %
0.2222222	0.2222222	0.2222315	6.15 ppm	0.2222166	0.2222278	41.94 ppm	19.00 ppm	FAIL 166.76 %
0.2000000	0.2000000	0.2000084	6.50 ppm	0.1999949	0.2000051	42.00 ppm	19.00 ppm	FAIL 164.71 %
0.1234567	0.1234567	0.1234616	8.67 ppm	0.1234533	0.1234601	39.45 ppm	19.00 ppm	FAIL 142.56 %
0.1111111	0.1111111	0.1111155	9.30 ppm	0.111108	0.1111142	39.24 ppm	19.00 ppm	FAIL 138.66 %
0.1000000	0.1000000	0.1000038	10.00 ppm	0.0999971	0.1000029	38.40 ppm	19.00 ppm	FAIL 132.41 %
0.0987654	0.0987654	0.0987692	10.09 ppm	0.09876253	0.09876827	38.17 ppm	19.00 ppm	FAIL 131.22 %
0.0111111	0.0111111	0.0111109	66.00 ppm	0.01111016	0.01111204	-19.35 ppm	19.00 ppm	PASS 22.76 %
-0.0111111	-0.0111111	-0.0111124	66.00 ppm	-0.01111204	-0.01111016	115.65 ppm	19.00 ppm	FAIL 136.06 %
-0.0987654	-0.0987654	-0.0987709	10.09 ppm	-0.09876827	-0.09876253	55.43 ppm	19.00 ppm	FAIL 190.56 %
-0.1000000	-0.1000000	-0.1000056	10.00 ppm	-0.1000029	-0.0999971	55.80 ppm	19.00 ppm	FAIL 192.41 %
-0.1111111	-0.1111111	-0.1111173	9.30 ppm	-0.1111142	-0.111108	55.94 ppm	19.00 ppm	FAIL 197.65 %
-0.1234567	-0.1234567	-0.1234634	8.67 ppm	-0.1234601	-0.1234533	54.59 ppm	19.00 ppm	FAIL 197.30 %
-0.2000000	-0.2000000	-0.2000103	6.50 ppm	-0.2000051	-0.1999949	51.57 ppm	19.00 ppm	FAIL 202.25 %
-0.2222222	-0.2222222	-0.2222335	6.15 ppm	-0.2222278	-0.2222166	50.99 ppm	19.00 ppm	FAIL 202.72 %
-0.3000000	-0.3000000	-0.3000149	5.33 ppm	-0.3000073	-0.2999927	49.78 ppm	19.00 ppm	FAIL 204.62 %
-0.3333333	-0.3333333	-0.3333497	5.10 ppm	-0.3333413	-0.3333253	49.31 ppm	19.00 ppm	FAIL 204.59 %
-0.4000000	-0.4000000	-0.4000195	4.75 ppm	-0.4000095	-0.3999905	48.70 ppm	19.00 ppm	FAIL 205.05 %
-0.4444444	-0.4444444	-0.4444659	4.58 ppm	-0.4444549	-0.4444339	48.29 ppm	19.00 ppm	FAIL 204.77 %
-0.5000000	-0.5000000	-0.5000241	4.40 ppm	-0.5000117	-0.4999883	48.28 ppm	19.00 ppm	FAIL 206.32 %
-0.5555555	-0.5555555	-0.5555823	4.26 ppm	-0.5555684	-0.5555426	48.20 ppm	19.00 ppm	FAIL 207.24 %
-0.6000000	-0.6000000	-0.6000287	4.17 ppm	-0.6000139	-0.5999861	47.81 ppm	19.00 ppm	FAIL 206.34 %
-0.6666666	-0.6666666	-0.6666984	4.05 ppm	-0.666682	-0.6666512	47.67 ppm	19.00 ppm	FAIL 206.81 %
-0.7000000	-0.7000000	-0.7000333	4.00 ppm	-0.7000161	-0.6999839	47.63 ppm	19.00 ppm	FAIL 207.08 %
-0.7777777	-0.7777777	-0.7778146	3.90 ppm	-0.7777955	-0.7777599	47.42 ppm	19.00 ppm	FAIL 207.06 %
-0.8000000	-0.8000000	-0.8000377	3.87 ppm	-0.8000183	-0.7999817	47.08 ppm	19.00 ppm	FAIL 205.86 %
-0.8888888	-0.8888888	-0.8889305	3.79 ppm	-0.8889091	-0.8888685	46.91 ppm	19.00 ppm	FAIL 205.85 %
-0.9000000	-0.9000000	-0.9000421	3.78 ppm	-0.9000205	-0.8999795	46.72 ppm	19.00 ppm	FAIL 205.10 %
-0.9999999	-0.9999999	-1.0000465	3.70 ppm	-1.000023	-0.999972	46.60 ppm	19.00 ppm	FAIL 205.29 %
-1.0999999	-1.0999999	-1.1000509	3.64 ppm	-1.100025	-1.099975	46.32 ppm	19.00 ppm	FAIL 204.59 %
DCV Linearity	10V Range	DUT	Source unc.	Low Limit	Hi limit	Measured	24h spec	Result
10.250000	10.250000	10.2504720	1.04 ppm	10.24979	10.25021	46.05 ppm	19.00 ppm	FAIL 229.78 %
10.000000	10.000000	10.0004610	1.05 ppm	9.999799	10.0002	46.10 ppm	19.00 ppm	FAIL 229.93 %
9.750000	9.750000	9.7504483	1.06 ppm	9.749804	9.750196	45.98 ppm	19.00 ppm	FAIL 229.21 %
9.500000	9.500000	9.5004394	1.06 ppm	9.499809	9.500191	46.25 ppm	19.00 ppm	FAIL 230.57 %
9.250000	9.250000	9.2504264	1.07 ppm	9.249814	9.250186	46.10 ppm	19.00 ppm	FAIL 229.68 %
9.000000	9.000000	9.0004135	1.08 ppm	8.999819	9.000181	45.94 ppm	19.00 ppm	FAIL 228.81 %
8.750000	8.750000	8.7504027	1.09 ppm	8.749824	8.750176	46.02 ppm	19.00 ppm	FAIL 229.08 %
8.500000	8.500000	8.5003910	1.09 ppm	8.499829	8.500171	46.00 ppm	19.00 ppm	FAIL 228.97 %
8.250000	8.250000	8.2503779	1.10 ppm	8.249834	8.250166	45.81 ppm	19.00 ppm	FAIL 227.89 %
8.000000	8.000000	8.0003665	1.11 ppm	7.999839	8.000161	45.81 ppm	19.00 ppm	FAIL 227.81 %
7.750000	7.750000	7.7503552	1.12 ppm	7.749844	7.750156	45.83 ppm	19.00 ppm	FAIL 227.79 %
7.500000	7.500000	7.5003457	1.13 ppm	7.499849	7.500151	46.09 ppm	19.00 ppm	FAIL 228.98 %
7.250000	7.250000	7.2503319	1.14 ppm	7.249854	7.250146	45.78 ppm	19.00 ppm	FAIL 227.31 %
7.000000	7.000000	7.0003198	1.16 ppm	6.999859	7.000141	45.69 ppm	19.00 ppm	FAIL 226.62 %
6.750000	6.750000	6.7503078	1.17 ppm	6.749864	6.750136	45.60 ppm	19.00 ppm	FAIL 226.08 %
6.500000	6.500000	6.5002957	1.18 ppm	6.499869	6.500131	45.49 ppm	19.00 ppm	FAIL 225.43 %
6.250000	6.250000	6.2502847	1.20 ppm	6.249874	6.250126	45.55 ppm	19.00 ppm	FAIL 225.50 %
6.000000	6.000000	6.0002734	1.22 ppm	5.999879	6.000121	45.57 ppm	19.00 ppm	FAIL 225.35 %
5.750000	5.750000	5.7502611	1.23 ppm	5.749884	5.750116	45.41 ppm	19.00 ppm	FAIL 224.46 %
5.500000	5.500000	5.5002499	1.25 ppm	5.499889	5.500111	45.44 ppm	19.00 ppm	FAIL 224.38 %
5.250000	5.250000	5.2502375	1.28 ppm	5.249894	5.250106	45.24 ppm	19.00 ppm	FAIL 223.07 %
5.000000	5.000000	5.0002273	1.30 ppm	4.999898	5.000102	45.46 ppm	19.00 ppm	FAIL 223.94 %

4.750000	4.750000	4.7502156	1.33 ppm	4.749903	4.750097	45.39 ppm	19.00 ppm	FAIL 223.26 %
4.500000	4.500000	4.5002035	1.36 ppm	4.499908	4.500092	45.22 ppm	19.00 ppm	FAIL 222.11 %
4.250000	4.250000	4.2501917	1.39 ppm	4.249913	4.250087	45.11 ppm	19.00 ppm	FAIL 221.22 %
4.000000	4.000000	4.0001799	1.42 ppm	3.999918	4.000082	44.98 ppm	19.00 ppm	FAIL 220.25 %
3.750000	3.750000	3.7501685	1.47 ppm	3.749923	3.750077	44.93 ppm	19.00 ppm	FAIL 219.51 %
3.500000	3.500000	3.5001570	1.51 ppm	3.499928	3.500072	44.86 ppm	19.00 ppm	FAIL 218.71 %
3.250000	3.250000	3.2501462	1.57 ppm	3.249933	3.250067	44.98 ppm	19.00 ppm	FAIL 218.69 %
3.000000	3.000000	3.0001352	1.63 ppm	2.999938	3.000062	45.07 ppm	19.00 ppm	FAIL 218.45 %
2.750000	2.750000	2.7501230	1.71 ppm	2.749943	2.750057	44.73 ppm	19.00 ppm	FAIL 215.97 %
2.500000	2.500000	2.5001118	1.80 ppm	2.499948	2.500052	44.72 ppm	19.00 ppm	FAIL 215.00 %
2.250000	2.250000	2.2501006	1.91 ppm	2.249953	2.250047	44.71 ppm	19.00 ppm	FAIL 213.83 %
2.000000	2.000000	2.0000896	2.05 ppm	1.999958	2.000042	44.80 ppm	19.00 ppm	FAIL 212.83 %
1.750000	1.750000	1.7500781	2.23 ppm	1.749963	1.750037	44.63 ppm	19.00 ppm	FAIL 210.21 %
1.500000	1.500000	1.5000668	2.47 ppm	1.499968	1.500032	44.53 ppm	19.00 ppm	FAIL 207.42 %
1.250000	1.250000	1.2500544	2.80 ppm	1.249973	1.250027	43.52 ppm	19.00 ppm	FAIL 199.63 %
1.000000	1.000000	1.0000431	3.30 ppm	0.9999777	1.000022	43.15 ppm	19.00 ppm	FAIL 193.50 %
0.750000	0.750000	0.7500320	4.13 ppm	0.7499827	0.7500173	42.67 ppm	19.00 ppm	FAIL 184.46 %
0.500000	0.500000	0.5000210	5.80 ppm	0.4999876	0.5000124	42.10 ppm	19.00 ppm	FAIL 169.76 %
0.250000	0.250000	0.2500096	10.80 ppm	0.2499926	0.2500075	38.60 ppm	19.00 ppm	FAIL 129.53 %
0.100000	0.100000	0.1000019	25.80 ppm	0.09999552	0.1000045	18.50 ppm	19.00 ppm	PASS 41.29 %
-0.100000	-0.100000	-0.1000071	25.80 ppm	-0.1000045	-0.09999552	70.50 ppm	19.00 ppm	FAIL 157.37 %
-0.250000	-0.250000	-0.2500147	10.80 ppm	-0.2500075	-0.2499926	58.60 ppm	19.00 ppm	FAIL 196.64 %
-0.500000	-0.500000	-0.5000266	5.80 ppm	-0.5000124	-0.4999876	53.10 ppm	19.00 ppm	FAIL 214.11 %
-0.750000	-0.750000	-0.7500379	4.13 ppm	-0.7500173	-0.7499827	50.47 ppm	19.00 ppm	FAIL 218.19 %
-1.000000	-1.000000	-1.0000497	3.30 ppm	-1.000022	-0.9999777	49.70 ppm	19.00 ppm	FAIL 222.87 %
-1.250000	-1.250000	-1.2500621	2.80 ppm	-1.250027	-1.249973	49.72 ppm	19.00 ppm	FAIL 228.07 %
-1.500000	-1.500000	-1.5000742	2.47 ppm	-1.500032	-1.499968	49.43 ppm	19.00 ppm	FAIL 230.24 %
-1.750000	-1.750000	-1.7500856	2.23 ppm	-1.750037	-1.749963	48.94 ppm	19.00 ppm	FAIL 230.54 %
-2.000000	-2.000000	-2.0000977	2.05 ppm	-2.000042	-1.999958	48.85 ppm	19.00 ppm	FAIL 232.07 %
-2.250000	-2.250000	-2.2501087	1.91 ppm	-2.250047	-2.249953	48.31 ppm	19.00 ppm	FAIL 231.04 %
-2.500000	-2.500000	-2.5001197	1.80 ppm	-2.500052	-2.499948	47.86 ppm	19.00 ppm	FAIL 230.10 %
-2.750000	-2.750000	-2.7501316	1.71 ppm	-2.750057	-2.749943	47.85 ppm	19.00 ppm	FAIL 231.07 %
-3.000000	-3.000000	-3.0001434	1.63 ppm	-3.000062	-2.999938	47.82 ppm	19.00 ppm	FAIL 231.78 %
-3.250000	-3.250000	-3.2501553	1.57 ppm	-3.250067	-3.249933	47.78 ppm	19.00 ppm	FAIL 232.30 %
-3.500000	-3.500000	-3.5001676	1.51 ppm	-3.500072	-3.499928	47.90 ppm	19.00 ppm	FAIL 233.54 %
-3.750000	-3.750000	-3.7501797	1.47 ppm	-3.750077	-3.749923	47.92 ppm	19.00 ppm	FAIL 234.10 %
-4.000000	-4.000000	-4.0001907	1.42 ppm	-4.000082	-3.999918	47.66 ppm	19.00 ppm	FAIL 233.41 %
-4.250000	-4.250000	-4.2502021	1.39 ppm	-4.250087	-4.249913	47.55 ppm	19.00 ppm	FAIL 233.22 %
-4.500000	-4.500000	-4.5002141	1.36 ppm	-4.500092	-4.499908	47.59 ppm	19.00 ppm	FAIL 233.74 %
-4.750000	-4.750000	-4.7502262	1.33 ppm	-4.750097	-4.749903	47.63 ppm	19.00 ppm	FAIL 234.29 %
-5.000000	-5.000000	-5.0002378	1.30 ppm	-5.000102	-4.999898	47.56 ppm	19.00 ppm	FAIL 234.29 %
-5.250000	-5.250000	-5.2502485	1.28 ppm	-5.250106	-5.249894	47.33 ppm	19.00 ppm	FAIL 233.40 %
-5.500000	-5.500000	-5.5002610	1.25 ppm	-5.500111	-5.499889	47.45 ppm	19.00 ppm	FAIL 234.34 %
-5.750000	-5.750000	-5.7502725	1.23 ppm	-5.750116	-5.749884	47.39 ppm	19.00 ppm	FAIL 234.26 %
-6.000000	-6.000000	-6.0002843	1.22 ppm	-6.000121	-5.999879	47.38 ppm	19.00 ppm	FAIL 234.34 %
-6.250000	-6.250000	-6.2502962	1.20 ppm	-6.250126	-6.249874	47.38 ppm	19.00 ppm	FAIL 234.57 %
-6.500000	-6.500000	-6.5003063	1.18 ppm	-6.500131	-6.499869	47.12 ppm	19.00 ppm	FAIL 233.48 %
-6.750000	-6.750000	-6.7503173	1.17 ppm	-6.750136	-6.749864	47.01 ppm	19.00 ppm	FAIL 233.06 %
-7.000000	-7.000000	-7.0003310	1.16 ppm	-7.000141	-6.999859	47.29 ppm	19.00 ppm	FAIL 234.55 %
-7.250000	-7.250000	-7.2503424	1.14 ppm	-7.250146	-7.249854	47.22 ppm	19.00 ppm	FAIL 234.46 %
-7.500000	-7.500000	-7.5003541	1.13 ppm	-7.500151	-7.499849	47.21 ppm	19.00 ppm	FAIL 234.54 %
-7.750000	-7.750000	-7.7503637	1.12 ppm	-7.750156	-7.749844	46.92 ppm	19.00 ppm	FAIL 233.21 %
-8.000000	-8.000000	-8.0003749	1.11 ppm	-8.000161	-7.999839	46.86 ppm	19.00 ppm	FAIL 233.03 %
-8.250000	-8.250000	-8.2503870	1.10 ppm	-8.250166	-8.249834	46.91 ppm	19.00 ppm	FAIL 233.38 %
-8.500000	-8.500000	-8.5004006	1.09 ppm	-8.500171	-8.499829	47.14 ppm	19.00 ppm	FAIL 234.62 %
-8.750000	-8.750000	-8.7504121	1.09 ppm	-8.750176	-8.749824	47.10 ppm	19.00 ppm	FAIL 234.46 %
-9.000000	-9.000000	-9.0004232	1.08 ppm	-9.000181	-8.999819	47.02 ppm	19.00 ppm	FAIL 234.17 %
-9.250000	-9.250000	-9.2504335	1.07 ppm	-9.250186	-9.249814	46.86 ppm	19.00 ppm	FAIL 233.51 %
-9.500000	-9.500000	-9.5004436	1.06 ppm	-9.500191	-9.499809	46.69 ppm	19.00 ppm	FAIL 232.78 %
-9.750000	-9.750000	-9.7504575	1.06 ppm	-9.750196	-9.749804	46.92 ppm	19.00 ppm	FAIL 233.91 %
-10.000000	-10.000000	-10.0004670	1.05 ppm	-10.0002	-9.999799	46.70 ppm	19.00 ppm	FAIL 232.92 %
-10.250000	-10.250000	-10.2504810	1.04 ppm	-10.25021	-10.24979	46.93 ppm	19.00 ppm	FAIL 234.17 %
DCV Linearity	100V Range	DUT	Source unc.	Low Limit	Hi limit	Measured	24h spec	Result
100.99999	100.99999	101.0027000	2.73 ppm	100.9978	101.00218	26.83 ppm	19.00 ppm	FAIL 117.99 %
100.10101	100.10101	100.1036900	2.73 ppm	100.09883	100.10319	26.77 ppm	19.00 ppm	FAIL 117.78 %
100.00000	100.00000	100.0026700	2.73 ppm	99.997827	100.00217	26.70 ppm	19.00 ppm	FAIL 117.47 %
99.99999	99.99999	100.0026400	2.73 ppm	99.997817	100.00216	26.50 ppm	19.00 ppm	FAIL 116.59 %
90.00000	90.00000	90.0024135	2.73 ppm	89.998044	90.001956	26.82 ppm	19.00 ppm	FAIL 123.41 %
88.88888	88.88888	88.8912540	2.73 ppm	88.886948	88.890812	26.71 ppm	19.00 ppm	FAIL 122.91 %
80.00000	80.00000	80.0021480	2.73 ppm	79.998262	80.001738	26.85 ppm	19.00 ppm	FAIL 123.56 %
77.77777	77.77777	77.7798500	2.73 ppm	77.77608	77.77946	26.74 ppm	19.00 ppm	FAIL 123.07 %
70.00000	70.00000	70.0018915	2.73 ppm	69.998479	70.001521	27.02 ppm	19.00 ppm	FAIL 124.35 %

66.66666	66.66666	66.6684705	2.73 ppm	66.665211	66.668109	27.16 ppm	19.00 ppm	FAIL 124.98 %
60.00000	60.00000	60.0016280	2.73 ppm	59.998696	60.001304	27.13 ppm	19.00 ppm	FAIL 124.87 %
55.55555	55.55555	55.5570535	2.73 ppm	55.554343	55.556757	27.06 ppm	19.00 ppm	FAIL 124.54 %
50.00000	50.00000	50.0013570	2.73 ppm	49.998914	50.001086	27.14 ppm	19.00 ppm	FAIL 124.90 %
44.44444	44.44444	44.4456595	2.73 ppm	44.443474	44.445406	27.44 ppm	19.00 ppm	FAIL 126.27 %
40.00000	40.00000	40.0011115	2.73 ppm	39.999131	40.000869	27.79 ppm	19.00 ppm	FAIL 127.88 %
33.33333	33.33333	33.3342560	2.73 ppm	33.332606	33.334054	27.78 ppm	19.00 ppm	FAIL 127.84 %
30.00000	30.00000	30.0008420	2.73 ppm	29.999348	30.000652	28.07 ppm	19.00 ppm	FAIL 129.16 %
22.22222	22.22222	22.2228565	2.73 ppm	22.221737	22.222703	28.64 ppm	19.00 ppm	FAIL 131.81 %
20.00000	20.00000	20.0005720	2.73 ppm	19.999565	20.000435	28.60 ppm	19.00 ppm	FAIL 131.62 %
11.11111	11.11111	11.1114300	2.73 ppm	11.11087	11.111352	28.71 ppm	19.00 ppm	FAIL 132.12 %
10.00000	10.00000	10.0002970	3.86 ppm	9.9997714	10.000229	29.70 ppm	19.00 ppm	FAIL 129.92 %
9.87654	9.87654	9.8768350	7.27 ppm	9.8762835	9.8768025	29.57 ppm	19.00 ppm	FAIL 112.54 %
-9.87654	-9.87654	-9.87679800	7.27 ppm	-9.8768025	-9.8762835	25.82 ppm	19.00 ppm	PASS 98.28 %
-10.00000	-10.00000	-10.0002600	3.86 ppm	-10.000229	-9.9997714	26.00 ppm	19.00 ppm	FAIL 113.74 %
-11.11111	-11.11111	-11.1114045	2.73 ppm	-11.111352	-11.11087	26.42 ppm	19.00 ppm	FAIL 121.56 %
-20.00000	-20.00000	-20.0005400	2.73 ppm	-20.000435	-19.999565	27.00 ppm	19.00 ppm	FAIL 124.25 %
-22.22222	-22.22222	-22.2228320	2.73 ppm	-22.222703	-22.221737	27.54 ppm	19.00 ppm	FAIL 126.74 %
-30.00000	-30.00000	-30.0008290	2.73 ppm	-30.000652	-29.999348	27.63 ppm	19.00 ppm	FAIL 127.17 %
-33.33333	-33.33333	-33.3342510	2.73 ppm	-33.334054	-33.332606	27.63 ppm	19.00 ppm	FAIL 127.15 %
-40.00000	-40.00000	-40.0010955	2.73 ppm	-40.000869	-39.999131	27.39 ppm	19.00 ppm	FAIL 126.04 %
-44.44444	-44.44444	-44.4456630	2.73 ppm	-44.445406	-44.443474	27.52 ppm	19.00 ppm	FAIL 126.63 %
-50.00000	-50.00000	-50.0013745	2.73 ppm	-50.001086	-49.998914	27.49 ppm	19.00 ppm	FAIL 126.51 %
-55.55555	-55.55555	-55.5570670	2.73 ppm	-55.556757	-55.554343	27.31 ppm	19.00 ppm	FAIL 125.66 %
-60.00000	-60.00000	-60.0016395	2.73 ppm	-60.001304	-59.998696	27.33 ppm	19.00 ppm	FAIL 125.75 %
-66.66666	-66.66666	-66.6684860	2.73 ppm	-66.668109	-66.665211	27.39 ppm	19.00 ppm	FAIL 126.05 %
-70.00000	-70.00000	-70.0018860	2.73 ppm	-70.001521	-69.998479	26.94 ppm	19.00 ppm	FAIL 123.99 %
-77.77777	-77.77777	-77.7798620	2.73 ppm	-77.77946	-77.77608	26.90 ppm	19.00 ppm	FAIL 123.78 %
-80.00000	-80.00000	-80.0021510	2.73 ppm	-80.001738	-79.998262	26.89 ppm	19.00 ppm	FAIL 123.73 %
-88.88888	-88.88888	-88.8912640	2.73 ppm	-88.890812	-88.886948	26.82 ppm	19.00 ppm	FAIL 123.42 %
-90.00000	-90.00000	-90.0024090	2.73 ppm	-90.001956	-89.998044	26.77 ppm	19.00 ppm	FAIL 123.18 %
-99.99999	-99.99999	-100.0026300	2.73 ppm	-100.00216	-99.997817	26.40 ppm	19.00 ppm	FAIL 127.35 %
-100.00000	-100.00000	-100.0026500	2.73 ppm	-100.00217	-99.997827	26.50 ppm	19.00 ppm	FAIL 127.83 %
-100.10101	-100.10101	-100.1036500	2.73 ppm	-100.10319	-100.09883	26.37 ppm	19.00 ppm	FAIL 127.23 %
-100.99999	-100.99999	-101.0026600	2.73 ppm	-101.00218	-100.9978	26.44 ppm	19.00 ppm	FAIL 127.59 %

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	0.9998224	1.000955	70.2 ppm	9.9969222E-01	9.9995258E-01	1132.801 ppm	60.0 ppm	FAIL 870.05 %
1.9 Ω	1.8999361	1.900992	8.3 ppm	1.8998063E+00	1.9000659E+00	555.756 ppm	60.0 ppm	FAIL 813.70 %
10 Ω	10.00032	10.001625	8.3 ppm	9.9996370E+00	1.0001003E+01	130.496 ppm	60.0 ppm	FAIL 191.06 %
19 Ω	18.999992	19.001524	4.3 ppm	1.8998770E+01	1.9001214E+01	80.632 ppm	60.0 ppm	FAIL 125.40 %
100 Ω	100.00313	100.00644	4.3 ppm	9.9996700E+01	1.0000956E+02	33.099 ppm	60.0 ppm	PASS 51.48 %
190 Ω	189.99805	190.0017	3.3 ppm	1.8999267E+02	1.9000343E+02	19.211 ppm	25.0 ppm	PASS 67.88 %
1.0 kΩ	1000.01	1000.0225	3.3 ppm	9.9998170E+02	1.0000383E+03	12.500 ppm	25.0 ppm	PASS 44.17 %
1.9 kΩ	1900.0232	1900.0415	3.3 ppm	1.8999694E+03	1.9000770E+03	9.631 ppm	25.0 ppm	PASS 34.03 %
10 kΩ	9999.793	9999.8444	3.3 ppm	9.9995100E+03	1.0000076E+04	5.140 ppm	25.0 ppm	PASS 18.16 %
19 kΩ	18999.397	18999.604	3.3 ppm	1.8998859E+04	1.8999935E+04	10.895 ppm	25.0 ppm	PASS 38.50 %
100 kΩ	99994.71	99995.279	3.3 ppm	9.9991880E+04	9.9997540E+04	5.685 ppm	25.0 ppm	PASS 20.09 %
190 kΩ	189988.9	189990.56	5.3 ppm	1.8994800E+05	1.9002980E+05	8.737 ppm	210.0 ppm	PASS 4.06 %
1.0 MΩ	999980.5	999983.05	5.3 ppm	9.9976520E+05	1.0001958E+06	2.550 ppm	210.0 ppm	PASS 1.18 %
1.9 MΩ	1899966.5	1899656.8	14.3 ppm	1.8970704E+06	1.9028626E+06	-163.003 ppm	1510.0 ppm	PASS 10.69 %
10 MΩ	9999020	9996890.3	14.3 ppm	9.9837785E+06	1.0014262E+07	-212.986 ppm	1510.0 ppm	PASS 13.97 %
19 MΩ	18998408	19012348	60.3 ppm	1.8938367E+07	1.9058449E+07	733.746 ppm	3100.0 ppm	PASS 23.22 %
100 MΩ	1.0000758E+08	1.0048034E+08	60.3 ppm	9.9691526E+07	1.0032363E+08	4727.242 ppm	3100.0 ppm	FAIL 149.58 %

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
100 Ω	Range 0.0010720 Ω	3.000e-03 Ω	-0.003	0.003	N/A	6.0000e-05 Ω	PASS
1.0 kΩ	Range 0.0009600 Ω	5.000e-03 Ω	-0.005	0.005	N/A	2.5000e-05 Ω	PASS
10 kΩ	Range 0.0077000 Ω	5.000e-02 Ω	-0.05	0.05	N/A	2.5000e-05 Ω	PASS
100 kΩ	Range 0.1095000 Ω	5.000e-01 Ω	-0.5	0.5	N/A	2.5000e-05 Ω	PASS
1.0 MΩ	Range -0.2500000 Ω	1.000e+01 Ω	-10	10	N/A	2.5000e-05 Ω	PASS
10 MΩ	Range -2.5000000 Ω	1.000e+02 Ω	-100	100	N/A	2.5000e-05 Ω	PASS
100 MΩ	Range 0.0000000 Ω	1.000e+04 Ω	-10000.0	10000.0	N/A	2.5000e-05 Ω	PASS
OHM ZERO 2W	DUT	Source unc.	Low Limit	Hi limit	Measured	24h spec	Result
100 Ω	Range 0.2436090 Ω	3.500e-01 Ω	-0.35	0.35	N/A	6.0000e-05 Ω	PASS
1.0 kΩ	Range 0.2425700 Ω	4.000e-01 Ω	-0.4	0.4	N/A	2.5000e-05 Ω	PASS
10 kΩ	Range 0.2318000 Ω	4.000e-01 Ω	-0.4	0.4	N/A	2.5000e-05 Ω	PASS
100 kΩ	Range 0.1300000 Ω	5.500e-01 Ω	-0.55	0.55	N/A	2.5000e-05 Ω	PASS
1.0 MΩ	Range -0.4600000 Ω	5.500e+00 Ω	-5.5	5.5	N/A	2.5000e-05 Ω	PASS
10 MΩ	Range -4.1000000 Ω	5.500e+01 Ω	-55	55	N/A	2.5000e-05 Ω	PASS
100 MΩ	Range 4.0000000 Ω	5.500e+02 Ω	-550	550	N/A	2.5000e-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	1.0123929	0.0129 %	0.99872091	1.00127909	VAC	1.2393 %	0.1150 %	FAIL 968.89 %
1.0 VAC @ 1.0 MHz	1.0	1.0480219	0.2500 %	0.6965	1.3035	VAC	4.8022 %	30.1000 %	PASS 15.82 %
10 VAC @ 60 Hz	10	9.9874476	0.2085 %	9.94265	10.05735	VAC	-0.1255 %	0.3650 %	PASS 21.89 %
10 VAC @ 200 Hz	10	9.9874656	0.0073 %	9.9627682	10.0372318	VAC	-0.1253 %	0.3650 %	PASS 33.67 %
10 VAC @ 500 Hz	10	9.9898232	0.0073 %	9.9627682	10.0372318	VAC	-0.1018 %	0.3650 %	PASS 27.33 %
10 VAC @ 50.0 kHz	10	10.165751	0.0129 %	9.9872091	10.0127909	VAC	1.6575 %	0.1150 %	FAIL 1295.85 %
10 VAC @ 1.0 MHz	10	10.865199	0.3000 %	6.95	13.05	VAC	8.6520 %	30.2000 %	PASS 28.37 %

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	0.0099373365	0.0312 %	0.009930	0.010070	-0.6266 %	0.6650 %	PASS 90.00 %
0.01 V AC+DC @ 20 Hz	0.009975317	0.0312 %	0.009950	0.010050	-0.2468 %	0.4650 %	PASS 49.74 %
0.01 V AC+DC @ 60 Hz	0.0099883785	0.0312 %	0.009950	0.010050	-0.1162 %	0.4650 %	PASS 23.42 %
0.01 V AC+DC @ 100 Hz	0.0099871745	0.0312 %	0.009950	0.010050	-0.1283 %	0.4650 %	PASS 25.85 %
0.01 V AC+DC @ 1.0 kHz	0.0099873345	0.0312 %	0.009950	0.010050	-0.1267 %	0.4650 %	PASS 25.52 %
0.01 V AC+DC @ 10.0 kHz	0.0099891455	312.27	0.009987	0.010013	-1085.450 ppm	950.0 ppm	PASS 85.99 %
0.01 V AC+DC @ 20.0 kHz	0.0099945045	312.27	0.009987	0.010013	-549.550 ppm	950.0 ppm	PASS 43.54 %
0.01 V AC+DC @ 50.0 kHz	0.010042829	0.0447 %	0.009974	0.010026	0.4283 %	0.2150 %	FAIL 164.90 %
0.01 V AC+DC @ 100.0 kHz	0.010268836	0.0773 %	0.009916	0.010084	2.6884 %	0.7650 %	FAIL 319.18 %
0.01 V AC+DC @ 300.0 kHz	0.011591279	0.1500 %	0.009583	0.010417	15.9128 %	4.0250 %	FAIL 381.14 %
0.01 V AC+DC @ 500.0 kHz	0.0083597165	0.2500 %	0.006965	0.013035	-16.4028 %	30.1000 %	PASS 54.05 %
0.01 V AC+DC @ 1.0 MHz	0.008325188	0.4000 %	0.006950	0.013050	-16.7481 %	30.1000 %	PASS 54.91 %
0.1 V AC+DC @ 10 Hz	0.099381547	0.0101 %	0.099325	0.100675	-0.6185 %	0.6650 %	PASS 91.60 %
0.1 V AC+DC @ 20 Hz	0.09977094	0.0101 %	0.099525	0.100475	-0.2291 %	0.4650 %	PASS 48.21 %
0.1 V AC+DC @ 60 Hz	0.099884305	0.0101 %	0.099525	0.100475	-0.1157 %	0.4650 %	PASS 24.35 %
0.1 V AC+DC @ 100 Hz	0.099895279	0.0101 %	0.099525	0.100475	-0.1047 %	0.4650 %	PASS 22.04 %
0.1 V AC+DC @ 1.0 kHz	0.099899082	0.0101 %	0.099525	0.100475	-0.1009 %	0.4650 %	PASS 21.24 %
0.1 V AC+DC @ 10.0 kHz	0.099994294	101.36	0.099895	0.100105	-57.060 ppm	950.0 ppm	PASS 5.43 %
0.1 V AC+DC @ 20.0 kHz	0.1002593	101.36	0.099895	0.100105	2593.000 ppm	950.0 ppm	FAIL 246.63 %
0.1 V AC+DC @ 50.0 kHz	0.10158576	0.0171 %	0.099768	0.100232	1.5858 %	0.2150 %	FAIL 683.12 %
0.1 V AC+DC @ 100.0 kHz	0.10349618	0.0461 %	0.099189	0.100811	3.4962 %	0.7650 %	FAIL 431.05 %
0.1 V AC+DC @ 300.0 kHz	0.10366638	0.0764 %	0.095899	0.104101	3.6664 %	4.0250 %	PASS 89.39 %
0.1 V AC+DC @ 500.0 kHz	0.10269463	0.1500 %	0.069750	0.130250	2.6946 %	30.1000 %	PASS 8.91 %
0.1 V AC+DC @ 1.0 MHz	0.097641427	0.3000 %	0.069600	0.130400	-2.3586 %	30.1000 %	PASS 7.76 %
1.0 V AC+DC @ 10 Hz	0.99378829	0.0050 %	0.995300	1.004700	-0.6212 %	0.4650 %	FAIL 132.18 %
1.0 V AC+DC @ 20 Hz	0.99773158	0.0050 %	0.996300	1.003700	-0.2268 %	0.3650 %	PASS 61.32 %
1.0 V AC+DC @ 60 Hz	0.9988684	0.0050 %	0.996300	1.003700	-0.1132 %	0.3650 %	PASS 30.59 %
1.0 V AC+DC @ 100 Hz	0.99897086	0.0050 %	0.996300	1.003700	-0.1029 %	0.3650 %	PASS 27.82 %
1.0 V AC+DC @ 1.0 kHz	0.99904679	0.0050 %	0.996300	1.003700	-0.0953 %	0.3650 %	PASS 25.77 %
1.0 V AC+DC @ 10.0 kHz	1.000041	49.55	0.999400	1.000600	41.000 ppm	550.0 ppm	PASS 6.84 %
1.0 V AC+DC @ 20.0 kHz	1.0028157	49.55	0.999400	1.000600	2815.700 ppm	550.0 ppm	FAIL 469.64 %
1.0 V AC+DC @ 50.0 kHz	1.0167291	0.0080 %	0.998770	1.001230	1.6729 %	0.1150 %	FAIL 1359.59 %
1.0 V AC+DC @ 100.0 kHz	1.0366034	0.0113 %	0.994237	1.005763	3.6603 %	0.5650 %	FAIL 635.12 %
1.0 V AC+DC @ 300.0 kHz	1.0475669	0.0395 %	0.959355	1.040645	4.7567 %	4.0250 %	FAIL 117.03 %
1.0 V AC+DC @ 500.0 kHz	1.0336746	0.1100 %	0.697900	1.302100	3.3675 %	30.1000 %	PASS 11.15 %
1.0 V AC+DC @ 1.0 MHz	1.0488306	0.1800 %	0.697200	1.302800	4.8831 %	30.1000 %	PASS 16.13 %
10.0 V AC+DC @ 10 Hz	9.9379473	0.0048 %	9.948018	10.051982	-0.6205 %	0.5150 %	FAIL 119.37 %
10.0 V AC+DC @ 20 Hz	9.9767801	0.0048 %	9.963018	10.036982	-0.2322 %	0.3650 %	PASS 62.79 %
10.0 V AC+DC @ 60 Hz	9.9881814	0.0048 %	9.963018	10.036982	-0.1182 %	0.3650 %	PASS 31.96 %
10.0 V AC+DC @ 100 Hz	9.9891776	0.0048 %	9.963018	10.036982	-0.1082 %	0.3650 %	PASS 29.26 %
10.0 V AC+DC @ 1.0 kHz	9.989956	0.0048 %	9.963018	10.036982	-0.1004 %	0.3650 %	PASS 27.16 %
10.0 V AC+DC @ 10.0 kHz	9.9999501	48.18	9.994018	10.005982	-4.990 ppm	550.0 ppm	PASS 0.83 %
10.0 V AC+DC @ 20.0 kHz	10.027459	48.18	9.994018	10.005982	2745.950 ppm	550.0 ppm	FAIL 459.05 %
10.0 V AC+DC @ 50.0 kHz	10.166535	0.0080 %	9.987696	10.012304	1.6654 %	0.1150 %	FAIL 1353.45 %
10.0 V AC+DC @ 100.0 kHz	10.366919	0.0106 %	9.942436	10.057564	3.6692 %	0.5650 %	FAIL 637.41 %
10.0 V AC+DC @ 300.0 kHz	10.502966	0.0321 %	9.594286	10.405714	5.0297 %	4.0250 %	FAIL 123.97 %
10.0 V AC+DC @ 500.0 kHz	10.392912	0.1100 %	6.969000	13.031000	3.9291 %	30.2000 %	PASS 12.96 %
10.0 V AC+DC @ 1.0 MHz	10.887726	0.1700 %	6.963000	13.037000	8.8773 %	30.2000 %	PASS 29.23 %
100.0 V AC+DC @ 60 Hz	99.798911	0.0060 %	99.628982	100.371018	-0.2011 %	0.3650 %	PASS 54.20 %
100.0 V AC+DC @ 100 Hz	99.874522	0.0060 %	99.628982	100.371018	-0.1255 %	0.3650 %	PASS 33.82 %
100.0 V AC+DC @ 1.0 kHz	99.871747	0.0060 %	99.628982	100.371018	-0.1283 %	0.3650 %	PASS 34.57 %
100.0 V AC+DC @ 10.0 kHz	99.970144	60.18	99.938982	100.061018	-298.565 ppm	550.0 ppm	PASS 48.93 %
100.0 V AC+DC @ 20.0 kHz	100.25857	65	99.938500	100.061500	2585.650 ppm	550.0 ppm	FAIL 419.75 %
100.0 V AC+DC @ 50.0 kHz	101.69848	0.0170 %	99.867998	100.132002	1.6985 %	0.1150 %	FAIL 1285.73 %
100.0 V AC+DC @ 100.0 kHz	103.79113	0.0400 %	99.394997	100.605003	3.7911 %	0.5650 %	FAIL 626.53 %
750.0 V AC+DC @ 60 Hz	749.05716	0.0074 %	747.207270	752.792730	-0.1257 %	0.3650 %	PASS 33.69 %
750.0 V AC+DC @ 100 Hz	749.0854	0.0074 %	747.207270	752.792730	-0.1219 %	0.3650 %	PASS 32.68 %
750.0 V AC+DC @ 1.0 kHz	749.04451	0.0074 %	747.207270	752.792730	-0.1274 %	0.3650 %	PASS 34.14 %

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 mADC	0	2.097E-07	33.64 ppm	0	0	Z-check	11000 ppm	INFO
0.5 mADC	0.0005	0.0005004975	33.64 ppm	0.0004944832	0.0005055168	0.0995 %	11000 ppm	PASS 9.02 %
1.0 mADC	0.001	0.0010007858	33.64 ppm	0.0009889664	0.001011034	0.0786 %	11000 ppm	PASS 7.12 %
-1.0 mADC	-0.001	-0.001000378	33.64 ppm	-0.001011034	-0.0009889664	0.0378 %	11000 ppm	PASS 3.43 %
-0.5 mADC	-0.0005	-0.0005000842	33.64 ppm	-0.0005055168	-0.0004944832	0.0168 %	11000 ppm	PASS 1.53 %
Zero 00 mADC	0	2.117E-07	32.27 ppm	0	0	Z-check	11000 ppm	INFO
5 mADC	0.005	0.0050030946	32.27 ppm	0.004999089	0.005000911	618.930 ppm	150 ppm	FAIL 339.57 %
10 mADC	0.01	0.010005986	32.27 ppm	0.009998177	0.01000182	598.650 ppm	150 ppm	FAIL 328.44 %
-10 mADC	-0.01	-0.010005577	32.27 ppm	-0.01000182	-0.009998177	557.750 ppm	150 ppm	FAIL 306.00 %
-5 mADC	-0.005	-0.0050027008	32.27 ppm	-0.005000911	-0.004999089	540.150 ppm	150 ppm	FAIL 296.35 %
Zero 000 mADC	0	2.088E-07	53.32 ppm	0	0	Z-check	11000 ppm	INFO
50 mADC	0.05	0.050028025	53.32 ppm	0.04999033	0.05000967	560.500 ppm	140 ppm	FAIL 289.93 %
100 mADC	0.1	0.10005675	53.32 ppm	0.09998067	0.1000193	567.550 ppm	140 ppm	FAIL 293.58 %
-100 mADC	-0.1	-0.10005658	53.32 ppm	-0.1000193	-0.09998067	565.750 ppm	140 ppm	FAIL 292.65 %
-50 mADC	-0.05	-0.050027811	53.32 ppm	-0.05000967	-0.04999033	556.220 ppm	140 ppm	FAIL 287.72 %
Zero ADC	0	1.098E-07	115.22 ppm	0	0	Z-check	11000 ppm	INFO
0.5 ADC	0.5	0.49994343	115.22 ppm	0.4996624	0.5003376	-113.140 ppm	560 ppm	PASS 16.76 %
1.0 ADC	1	0.99985187	115.22 ppm	0.9993248	1.000675	-148.135 ppm	560 ppm	PASS 21.94 %
-1.0 ADC	-1	-0.99987183	115.22 ppm	-1.000675	-0.9993248	-128.175 ppm	560 ppm	PASS 18.98 %
-0.5 ADC	-0.5	-0.49993712	115.22 ppm	-0.5003376	-0.4996624	-125.760 ppm	560 ppm	PASS 18.63 %

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
1.0 A AC @ 50 Hz	0.01	0.01019191	0.0211 %	0.0099518909	0.0100481091	1.9191 %	0.4600 %	FAIL 398.91 %
1.0 A AC @ 50 Hz	0.1	0.09993198	0.0138 %	0.099526182	0.100473818	-0.0680 %	0.4600 %	PASS 14.36 %
1.0 A AC @ 50 Hz	1.0	0.93956551	0.0138 %	0.99526182	1.00473818	-6.0434 %	0.4600 %	FAIL 1275.48 %
2.0 A AC @ 50 Hz	2.0	2.0061828	0.0138 %	1.99052364	2.00947636	0.3091 %	0.4600 %	PASS 65.24 %
1.0 A AC @ 60 Hz	0.01	0.010263285	0.0211 %	0.0099518909	0.0100481091	2.6328 %	0.4600 %	FAIL 547.27 %
1.0 A AC @ 60 Hz	0.1	0.099957225	0.0211 %	0.099518909	0.100481091	-0.0428 %	0.4600 %	PASS 8.89 %
1.0 A AC @ 60 Hz	1.0	0.93938858	0.0138 %	0.99526182	1.00473818	-6.0611 %	0.4600 %	FAIL 1279.21 %
2.0 A AC @ 60 Hz	2.0	2.006317	0.0138 %	1.99052364	2.00947636	0.3159 %	0.4600 %	PASS 66.66 %
1.0 A AC @ 1.0 kHz	0.01	0.01028001	0.0211 %	0.0099518909	0.0100481091	2.8001 %	0.4600 %	FAIL 582.03 %
1.0 A AC @ 1.0 kHz	0.1	0.09991344	0.0211 %	0.099518909	0.100481091	-0.0866 %	0.4600 %	PASS 17.99 %
1.0 A AC @ 1.0 kHz	1.0	0.98877395	0.0211 %	0.99518909	1.00481091	-1.1226 %	0.4600 %	FAIL 233.35 %
2.0 A AC @ 1.0 kHz	2.0	2.0064917	0.0138 %	1.99052364	2.00947636	0.3246 %	0.4600 %	PASS 68.50 %

Test date	01 November 2018 17:33
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Lab temperature maintained +24°C ±2°C

Internal use only

Not validated