cal equipment

HP 34401A

Manufacturer	AGILENT	Calibration date	August 19 2019
Model Number	34401A	Ambient Temperature	24.56 °C
Serial	Sonic	Relative Humidity	23.37 %
ID Number	XPR3	Pressure	1001.77
Notes	Belden ables	Test type	Automated verification

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
DC STD	xDevs.com	792X[2]	9.9999838 VDC	±0.22 ppm	XD01	08/07/2019	08/07/2020
DC STD	Fluke	732B	10.0000152	±0.3 ppm	6480002	05/30/2019	05/30/2020
STDR	ESI	SR104	9999.9995 KΩ	±0.16 ppm	G202088930104	06/06/2019	06/06/2020
STDR	xDevs.com/Fluke	SL935	1.00006085 Ω	±0.17 ppm	XR03	08/14/2019	08/14/2020
STDR	xDevs.com/Fluke	SL935	9999.9737 kΩ	±0.17 ppm	XR02	08/14/2019	08/14/2020
MFC	Fluke	5720A	03/HLK	E2E6	XC01	08/18/2019	08/18/2020
Amplifier	Fluke	5725A		5930005	XB01	08/18/2019	08/18/2020

MFC last calibrated	1.0 days ago	MFC since DCV ZERO	0.0 days ago
MFC since WBFLAT	190.0 days ago	MFC since WBGAIN	0.0 days ago
MFC Confidence level	**24h 95% REL**	MFC Calibrate date	2019-08-17 00:00:00
MFC Calibrate date Zero	2019-08-18 00:00:00	Calibrate date WB Flatness	2019-02-09 00:00:00
Calibrate date WB Gain	2019-08-18 00:00:00	CAL CONST 6.5V reference voltage	6.95748455712
CAL CONST 13V reference voltage	13.85531006	CAL CONST 22V range positive zero	398.17951
CAL CONST 22V range negative zero	398.17922	CAL CONST DAC Linearity	0.0
CAL CONST 10KOHM true output resistance	9999.78412139	CAL CONST 10KOHM standard resistance	9998.72316298
CAL CONST, Zero calibration temperature	24.0	CAL CONST, All calibration temp	24.0
Booster type	VB5725,IB5725	Current output posts	IB5725
Calibrate date 5725A AMP	2019-08-17 00:00:00	Calibrated days ago	Debug

CAL CONST, Amp ACAL temperature	24.0	CAL CONST, Amp CalCheck temperature	24.0

Total uncertainty of each calibration point calculated with RSS

$$U_{95\%} = \sqrt{U_{SRC}{}^2 * U_{DUT}{}^2 * 2}$$

Meter Info	Sonic's 34401A	Test date start	17 August 2019 11:40
Test specification interval	**24 hour DUT spec**	Self-test result?	PASS
Line frequency	110V 60 Hz	Next calibration date	17 August 2020
Last calibration date	10 February 2019	SCPI Version	1
Last calibration temperature	26.6	Calibration count	105

Test procedure : $Id: hp34401a.py | Rev 1528 | 2019/08/18 04:51:04 tin_fpga $

Source procedure : $Id: f5720b.py | Rev 1529 | 2019/08/19 00:42:32 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	0.0000000E+00	**-0.12 µV**	8.23 µV	-11.230 µV	11.230 µV	N/A	3.00 µV	PASS
Short 0.0 VDC	0.0000000E+00	**-0.52 µV**	3.95 µV	-9.950 µV	9.950 µV	N/A	6.00 µV	PASS
Short 00.0 VDC	0.0000000E+00	**0.00 µV**	3.32 µV	-43.320 µV	43.320 µV	N/A	40.00 µV	PASS
Short 000.0 VDC	0.0000000E+00	**26.00 µV**	4.36 µV	-604.360 µV	604.360 µV	N/A	0.60 mV	PASS
Short 0000.0 VDC	0.0000000E+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	**0.099998802**	9.91 ppm	0.099993009	0.10000699	-11.975 ppm	60.00 ppm	PASS 9.85 %
-0.1 VDC (0.10 Range)	-0.1000000	**-0.099999378**	9.91 ppm	-0.10000699	-0.099993009	-6.220 ppm	60.00 ppm	PASS 5.11 %
0.1 VDC (1.00 Range)	0.1000000	**0.099999925**	9.91 ppm	0.099991009	0.10000899	-0.750 ppm	80.00 ppm	PASS 0.47 %
0.5 VDC (1.00 Range)	0.5000000	**0.49999855**	4.05 ppm	0.49998198	0.50001802	-2.900 ppm	32.00 ppm	PASS 4.50 %
1.0 VDC (1.00 Range)	1.0000000	**0.99999618**	4.05 ppm	0.99996995	1.00003	-3.820 ppm	26.00 ppm	PASS 7.26 %
-0.1 VDC (1.00 Range)	-0.1000000	**-0.10000004**	9.91 ppm	-0.10000899	-0.099991009	0.400 ppm	80.00 ppm	PASS 0.25 %
-0.5 VDC (1.00 Range)	-0.5000000	**-0.49999911**	4.05 ppm	-0.50001802	-0.49998198	-1.780 ppm	32.00 ppm	PASS 2.76 %
-1.0 VDC (1.00 Range)	-1.0000000	**-0.99999795**	4.05 ppm	-1.00003	-0.99996995	-2.045 ppm	26.00 ppm	PASS 3.89 %
1.0 VDC (10.00 Range)	1.0000000	**0.9999983**	4.05 ppm	0.99994095	1.0000591	-1.700 ppm	55.00 ppm	PASS 1.54 %
5.0 VDC (10.00 Range)	5.0000000	**4.999993**	1.47 ppm	4.9998776	5.0001224	-1.400 ppm	23.00 ppm	PASS 3.04 %
10.0 VDC (10.00 Range)	10.0000000	**9.9999878**	2.36 ppm	9.9997864	10.000214	-1.220 ppm	19.00 ppm	PASS 3.19 %
-1.0 VDC (10.00 Range)	-1.0000000	**-1.0000018**	4.05 ppm	-1.0000591	-0.99994095	1.800 ppm	55.00 ppm	PASS 1.63 %
-5.0 VDC (10.00 Range)	-5.0000000	**-5.0000007**	1.47 ppm	-5.0001224	-4.9998776	0.140 ppm	23.00 ppm	PASS 0.30 %
-10.0 VDC (10.00 Range)	-10.0000000	**-9.9999999**	2.36 ppm	-10.000214	-9.9997864	-0.010 ppm	19.00 ppm	PASS 0.03 %
10 VDC (100.00 Range)	10.0000000	**10.000032**	2.36 ppm	9.9991764	10.000824	3.200 ppm	80.00 ppm	PASS 2.00 %
50 VDC (100.00 Range)	50.0000000	**50.000046**	5.45 ppm	49.998127	50.001873	0.920 ppm	32.00 ppm	PASS 1.42 %
100 VDC (100.00 Range)	100.0000000	**99.999936**	5.45 ppm	99.996855	100.00315	-0.640 ppm	26.00 ppm	PASS 1.20 %
-10 VDC (100.00 Range)	-10.0000000	**-10.000011**	2.36 ppm	-10.000824	-9.9991764	1.100 ppm	80.00 ppm	PASS 0.69 %
-50 VDC (100.00 Range)	-50.0000000	**-50.000077**	5.45 ppm	-50.001873	-49.998127	1.540 ppm	32.00 ppm	PASS 2.37 %
-100 VDC (100.00 Range)	-100.0000000	**-100.00007**	5.45 ppm	-100.00315	-99.996855	0.700 ppm	26.00 ppm	PASS 1.32 %
100 VDC (1000.00 Range)	100.0000000	**99.99968**	5.45 ppm	99.991455	100.00854	-3.200 ppm	80.00 ppm	PASS 2.00 %
200 VDC (1000.00 Range)	200.0000000	**199.9998**	5.45 ppm	199.98891	200.01109	-1.000 ppm	50.00 ppm	PASS 0.99 %
1000 VDC (1000.00 Range)	1000.0000000	**1000.0015**	7.55 ppm	999.95645	1000.0435	1.500 ppm	26.00 ppm	PASS 5.99 %
-100 VDC (1000.00 Range)	-100.0000000	**-100.00012**	5.45 ppm	-100.00854	-99.991455	1.200 ppm	80.00 ppm	PASS 0.75 %
-200 VDC (1000.00 Range)	-200.0000000	**-200.00024**	5.45 ppm	-200.01109	-199.98891	1.175 ppm	50.00 ppm	PASS 1.17 %
-1000 VDC (1000.00 Range)	-1000.0000000	**-1000.0032**	7.55 ppm	-1000.0435	-999.95645	3.200 ppm	26.00 ppm	PASS 12.77 %

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	Reference	DUT	Source unc.	Low Limit	Hi limit	Measured	24h spec	Result
1 Ω	0.9997928 Ω	**0.999805 Ω**	32.0 ppm	9.9673081E-01	1.0028548E+00	12.203 ppm	3030.6 ppm	PASS, 0.20 % of 6061.58 ppm
1.9 Ω	1.8998366 Ω	**1.899755 Ω**	25.0 ppm	1.8967321E+00	1.9029411E+00	-42.951 ppm	1609.1 ppm	PASS, 1.33 % of 3218.55 ppm
10 Ω	10.000584 Ω	**10.000449 Ω**	5.0 ppm	9.9972340E+00	1.0003934E+01	-13.499 ppm	330.0 ppm	PASS, 2.05 % of 660.04 ppm
19 Ω	19.000245 Ω	**19.000083 Ω**	4.0 ppm	1.8996599E+01	1.9003891E+01	-8.526 ppm	187.9 ppm	PASS, 2.27 % of 375.87 ppm
100 Ω	99.99666 Ω	**99.99565 Ω**	1.7 ppm	9.9990490E+01	1.0000283E+02	-10.100 ppm	60.0 ppm	PASS, 8.41 % of 120.05 ppm
190 Ω	189.99422 Ω	**189.99428 Ω**	1.7 ppm	1.8998510E+02	1.9000334E+02	0.316 ppm	46.3 ppm	PASS, 0.34 % of 92.70 ppm
1.0 kΩ	1000.025 Ω	**1000.0225 Ω**	1.7 ppm	9.9999830E+02	1.0000517E+03	-2.500 ppm	25.0 ppm	PASS, 4.99 % of 50.12 ppm
1.9 kΩ	1899.903 Ω	**1899.9068 Ω**	1.7 ppm	1.8998118E+03	1.8999942E+03	2.026 ppm	46.3 ppm	PASS, 2.19 % of 92.70 ppm
10 kΩ	9999.784 Ω	**9999.781 Ω**	1.6 ppm	9.9995180E+03	1.0000050E+04	-0.305 ppm	25.0 ppm	PASS, 0.61 % of 50.10 ppm
19 kΩ	18999.247 Ω	**18999.119 Ω**	1.7 ppm	1.8998335E+04	1.9000159E+04	-6.737 ppm	46.3 ppm	PASS, 7.27 % of 92.70 ppm
100 kΩ	99994.5 Ω	**99993.654 Ω**	2.0 ppm	9.9991800E+04	9.9997200E+04	-8.460 ppm	25.0 ppm	PASS, 16.87 % of 50.16 ppm
190 kΩ	189988.68 Ω	**189989.3 Ω**	2.0 ppm	1.8994030E+05	1.9003706E+05	3.263 ppm	252.6 ppm	PASS, 0.65 % of 505.29 ppm
1.0 MΩ	999979.8 Ω	**999978.52 Ω**	2.5 ppm	9.9976730E+05	1.0001923E+06	-1.285 ppm	210.0 ppm	PASS, 0.31 % of 420.03 ppm
1.9 MΩ	1899973.9 Ω	**1900009.4 Ω**	3.0 ppm	1.8970182E+06	1.9029296E+06	18.658 ppm	1552.6 ppm	PASS, 0.60 % of 3105.27 ppm
10 MΩ	9999063 Ω	**9998984.3 Ω**	10.0 ppm	9.9838644E+06	1.0014262E+07	-7.871 ppm	1510.0 ppm	PASS, 0.26 % of 3020.07 ppm
19 MΩ	18998631 Ω	**18998861 Ω**	20.0 ppm	1.8931255E+07	1.9066007E+07	12.106 ppm	3526.4 ppm	PASS, 0.17 % of 7052.82 ppm
100 MΩ	1.0000492E+08 Ω	**1.0000734E+08 Ω**	50.0 ppm	9.9689905E+07	1.0031994E+08	24.149 ppm	3100.0 ppm	PASS, 0.39 % of 6200.80 ppm

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 0.0009660 Ω**	3.000e-03 Ω	-0.003	0.003	N/A	6.0000e-05 Ω	PASS
1.0 kΩ	**Range 0.0010500 Ω**	5.000e-03 Ω	-0.005	0.005	N/A	2.5000e-05 Ω	PASS
10 kΩ	**Range 0.0091000 Ω**	5.000e-02 Ω	-0.05	0.05	N/A	2.5000e-05 Ω	PASS
100 kΩ	**Range 0.0520000 Ω**	5.000e-01 Ω	-0.5	0.5	N/A	2.5000e-05 Ω	PASS
1.0 MΩ	**Range 0.0000000 Ω**	1.000e+01 Ω	-10	10	N/A	2.5000e-05 Ω	PASS
10 MΩ	**Range 0.0000000 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 0.3169020 Ω**	3.500e-01 Ω	-0.35	0.35	N/A	6.0000e-05 Ω	PASS
1.0 kΩ	**Range 0.3005200 Ω**	4.000e-01 Ω	-0.4	0.4	N/A	2.5000e-05 Ω	PASS
10 kΩ	**Range 0.2700000 Ω**	4.000e-01 Ω	-0.4	0.4	N/A	2.5000e-05 Ω	PASS
100 kΩ	**Range 0.0220000 Ω**	5.500e-01 Ω	-0.55	0.55	N/A	2.5000e-05 Ω	PASS
1.0 MΩ	**Range 0.1600000 Ω**	5.500e+00 Ω	-5.5	5.5	N/A	2.5000e-05 Ω	PASS
10 MΩ	**Range 7.3000000 Ω**	5.500e+01 Ω	-55	55	N/A	2.5000e-05 Ω	PASS
100 MΩ	**Range 13.0000000 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 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 @ 60 Hz	**0.010005473**	0.0312 %	0.009937	0.010063	0.0547 %	0.6000 %	PASS 4.55 %
0.01 V AC+DC @ 100 Hz	**0.0099821635**	0.0312 %	0.009937	0.010063	-0.1784 %	0.6000 %	PASS 14.84 %
0.01 V AC+DC @ 1.0 kHz	**0.009996075**	0.0312 %	0.009937	0.010063	-0.0393 %	0.6000 %	PASS 3.27 %
0.01 V AC+DC @ 10.0 kHz	**0.0099985715**	0.0312 %	0.009974	0.010026	-0.0143 %	0.2300 %	PASS 3.08 %
0.01 V AC+DC @ 20.0 kHz	**0.00999903**	0.0312 %	0.009974	0.010026	-0.0097 %	0.2300 %	PASS 2.09 %
0.01 V AC+DC @ 50.0 kHz	**0.010002747**	0.0447 %	0.009961	0.010039	0.0275 %	0.3500 %	PASS 3.89 %
0.01 V AC+DC @ 100.0 kHz	**0.010041278**	0.0773 %	0.009902	0.010098	0.4128 %	0.9000 %	PASS 22.85 %
0.01 V AC+DC @ 300.0 kHz	**0.01062108**	0.1500 %	0.009560	0.010440	6.2108 %	4.2500 %	PASS 73.02 %
0.01 V AC+DC @ 500.0 kHz	**0.011128839**	0.2500 %	0.006875	0.013125	11.2884 %	31.0000 %	PASS 18.21 %
0.01 V AC+DC @ 1.0 MHz	**0.0096448895**	0.4000 %	0.006860	0.013140	-3.5511 %	31.0000 %	PASS 5.73 %
0.1 V AC+DC @ 60 Hz	**0.10007603**	0.0101 %	0.099525	0.100475	0.0760 %	0.4650 %	PASS 8.17 %
0.1 V AC+DC @ 100 Hz	**0.099855027**	0.0101 %	0.099525	0.100475	-0.1450 %	0.4650 %	PASS 15.58 %
0.1 V AC+DC @ 1.0 kHz	**0.099991844**	0.0101 %	0.099525	0.100475	-0.0082 %	0.4650 %	PASS 0.88 %
0.1 V AC+DC @ 10.0 kHz	**0.10001267**	0.0101 %	0.099895	0.100105	0.0127 %	0.0950 %	PASS 6.63 %
0.1 V AC+DC @ 20.0 kHz	**0.10002398**	0.0101 %	0.099895	0.100105	0.0240 %	0.0950 %	PASS 12.55 %
0.1 V AC+DC @ 50.0 kHz	**0.10010328**	0.0171 %	0.099768	0.100232	0.1033 %	0.2150 %	PASS 23.94 %
0.1 V AC+DC @ 100.0 kHz	**0.10062697**	0.0461 %	0.099189	0.100811	0.6270 %	0.7650 %	PASS 40.90 %
0.1 V AC+DC @ 300.0 kHz	**0.10718186**	0.0764 %	0.095899	0.104101	7.1819 %	4.0250 %	PASS 89.20 %
0.1 V AC+DC @ 500.0 kHz	**0.11336575**	0.1500 %	0.069750	0.130250	13.3657 %	30.1000 %	PASS 22.20 %
0.1 V AC+DC @ 1.0 MHz	**0.10299959**	0.3000 %	0.069600	0.130400	2.9996 %	30.1000 %	PASS 4.98 %
1.0 V AC+DC @ 60 Hz	**1.0007289**	0.0050 %	0.995435	1.004565	0.0729 %	0.4515 %	PASS 8.07 %
1.0 V AC+DC @ 100 Hz	**0.99860519**	0.0050 %	0.995435	1.004565	-0.1395 %	0.4515 %	PASS 15.45 %
1.0 V AC+DC @ 1.0 kHz	**0.99997487**	0.0050 %	0.995435	1.004565	-0.0025 %	0.4515 %	PASS 0.28 %
1.0 V AC+DC @ 10.0 kHz	**1.000084**	0.0050 %	0.999135	1.000865	0.0084 %	0.0815 %	PASS 5.15 %
1.0 V AC+DC @ 20.0 kHz	**1.0000782**	0.0050 %	0.999135	1.000865	0.0078 %	0.0815 %	PASS 4.79 %
1.0 V AC+DC @ 50.0 kHz	**1.0004496**	0.0080 %	0.997905	1.002095	0.0450 %	0.2015 %	PASS 11.15 %
1.0 V AC+DC @ 100.0 kHz	**1.0069735**	0.0113 %	0.992372	1.007628	0.6973 %	0.7515 %	PASS 46.39 %
1.0 V AC+DC @ 1.0 MHz	**1.1821656**	0.1800 %	0.698100	1.301900	18.2166 %	30.0100 %	PASS 30.35 %
10.0 V AC+DC @ 60 Hz	**10.007226**	0.0048 %	9.954503	10.045497	0.0723 %	0.4501 %	PASS 8.03 %
10.0 V AC+DC @ 100 Hz	**9.9859564**	0.0048 %	9.954503	10.045497	-0.1404 %	0.4501 %	PASS 15.60 %
10.0 V AC+DC @ 1.0 kHz	**9.9998978**	0.0048 %	9.954503	10.045497	-0.0010 %	0.4501 %	PASS 0.11 %
10.0 V AC+DC @ 10.0 kHz	**10.000915**	0.0048 %	9.991503	10.008497	0.0091 %	0.0801 %	PASS 5.69 %
10.0 V AC+DC @ 20.0 kHz	**10.000886**	0.0048 %	9.991503	10.008497	0.0089 %	0.0801 %	PASS 5.52 %
10.0 V AC+DC @ 50.0 kHz	**10.004883**	0.0080 %	9.979181	10.020819	0.0488 %	0.2001 %	PASS 12.19 %
10.0 V AC+DC @ 100.0 kHz	**10.070244**	0.0106 %	9.923921	10.076079	0.7024 %	0.7501 %	PASS 46.81 %

10.0 V AC+DC @ 500.0 kHz	**10.366276**	0.1100 %	6.988900	13.011100	3.6628 %	30.0010 %	PASS 6.10 %
10.0 V AC+DC @ 1.0 MHz	**6.5715838**	0.1700 %	6.982900	13.017100	-34.2842 %	30.0010 %	PASS 57.14 %
100.0 V AC+DC @ 60 Hz	**100.07457**	0.0060 %	99.543967	100.456033	0.0746 %	0.4500 %	PASS 8.29 %
100.0 V AC+DC @ 100 Hz	**99.855592**	0.0060 %	99.543967	100.456033	-0.1444 %	0.4500 %	PASS 16.04 %
100.0 V AC+DC @ 1.0 kHz	**99.999989**	0.0060 %	99.543967	100.456033	-0.0000 %	0.4500 %	PASS 0.00 %
100.0 V AC+DC @ 10.0 kHz	**100.0057**	0.0060 %	99.913967	100.086033	0.0057 %	0.0800 %	PASS 3.55 %
100.0 V AC+DC @ 20.0 kHz	**99.989572**	0.0065 %	99.913485	100.086515	-0.0104 %	0.0800 %	PASS 6.49 %
100.0 V AC+DC @ 50.0 kHz	**99.95966**	0.0170 %	99.782983	100.217017	-0.0403 %	0.2000 %	PASS 10.05 %
100.0 V AC+DC @ 100.0 kHz	**100.53846**	0.0400 %	99.209982	100.790018	0.5385 %	0.7500 %	PASS 35.85 %
750.0 V AC+DC @ 60 Hz	**750.61504**	0.0074 %	746.569755	753.430245	0.0820 %	0.4500 %	PASS 9.11 %
750.0 V AC+DC @ 100 Hz	**748.91921**	0.0074 %	746.569755	753.430245	-0.1441 %	0.4500 %	PASS 16.01 %
750.0 V AC+DC @ 1.0 kHz	**749.99381**	0.0074 %	746.569755	753.430245	-0.0008 %	0.4500 %	PASS 0.09 %

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 00 mADC	0	**7.82E-08**						INFO
5 mADC	5.00000E-03 A	**4.9998971E-03 A**	32.27 ppm	0.004998589	0.005001411	-20.590 ppm	250 ppm	PASS 4.08 %
10 mADC	1.00000E-02 A	**9.9996608E-03 A**	32.27 ppm	0.009998177	0.01000182	-33.925 ppm	150 ppm	PASS 11.06 %
-10 mADC	-1.00000E-02 A	**-9.9994514E-03 A**	32.27 ppm	-0.01000182	-0.009998177	-54.860 ppm	150 ppm	PASS 17.88 %
-5 mADC	-5.00000E-03 A	**-4.9996729E-03 A**	32.27 ppm	-0.005001411	-0.004998589	-65.410 ppm	250 ppm	PASS 12.97 %
Zero 000 mADC	0	**8.25E-08**						INFO
50 mADC	5.00000E-02 A	**4.9998720E-02 A**	53.32 ppm	0.04998833	0.05001167	-25.590 ppm	180 ppm	PASS 6.82 %
100 mADC	1.00000E-01 A	**9.9995780E-02 A**	53.32 ppm	0.09998067	0.1000193	-42.200 ppm	140 ppm	PASS 14.08 %
-100 mADC	-1.00000E-01 A	**-9.9995030E-02 A**	53.32 ppm	-0.1000193	-0.09998067	-49.695 ppm	140 ppm	PASS 16.59 %
-50 mADC	-5.00000E-02 A	**-4.9997978E-02 A**	53.32 ppm	-0.05001167	-0.04998833	-40.430 ppm	180 ppm	PASS 10.77 %
Zero ADC	0	**5.535E-08**						INFO
0.5 ADC	5.00000E-01 A	**5.0002615E-01 A**	115.22 ppm	0.4996324	0.5003676	52.300 ppm	620 ppm	PASS 4.15 %
1.0 ADC	1.00000E+00 A	**1.0001339E+00 A**	115.22 ppm	0.9993248	1.000675	133.850 ppm	560 ppm	PASS 11.71 %
-1.0 ADC	-1.00000E+00 A	**-1.0001815E+00 A**	115.22 ppm	-1.000675	-0.9993248	181.500 ppm	560 ppm	PASS 15.87 %
-0.5 ADC	-5.00000E-01 A	**-5.0007792E-01 A**	115.22 ppm	-0.5003676	-0.4996324	155.840 ppm	620 ppm	PASS 12.36 %
Zero ADC	0	**7.21E-08**						INFO
1.0 ADC	1.00000E+00 A	**1.0001718E+00 A**	115.22 ppm	0.9993248	1.000675	171.750 ppm	560 ppm	PASS 15.02 %
2.0 ADC	2.00000E+00 A	**2.0008096E+00 A**	115.22 ppm	1.99717	2.00283	0.0405 %	1300 ppm	PASS 15.51 %
-2.0 ADC	-2.00000E+00 A	**-2.0011686E+00 A**	115.22 ppm	-2.00283	-1.99717	0.0584 %	1300 ppm	PASS 22.38 %
-1.0 ADC	-1.00000E+00 A	**-1.0006058E+00 A**	115.22 ppm	-1.000675	-0.9993248	605.750 ppm	560 ppm	PASS 52.98 %

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
2.0 A AC @ 50 Hz	2.0	**2.0062945E+00 A**	0.0138 %	1.99212364	2.00787636	0.3147 %	0.3800 %	PASS 41.38 %
1.0 A AC @ 60 Hz	0.1	**1.0061938E-01 A**	0.0211 %	0.098078909	0.101921091	0.6194 %	1.9000 %	PASS 16.30 %
2.0 A AC @ 60 Hz	2.0	**2.0088564E+00 A**	0.0211 %	1.99197818	2.00802182	0.4428 %	0.3800 %	PASS 58.18 %
1.0 A AC @ 1.0 kHz	0.1	**1.0055917E-01 A**	0.0138 %	0.098086182	0.101913818	0.5592 %	1.9000 %	PASS 14.71 %
2.0 A AC @ 1.0 kHz	2.0	**2.0014682E+00 A**	0.0211 %	1.99197818	2.00802182	0.0734 %	0.3800 %	PASS 9.64 %

Test completed

Test date	17 August 2019 16:40

Lab temperature maintained +24°C ±2°C

Internal use only

Not validated