

Manufacturer	Datron Instruments	Calibration date	May 20 2019
Model Number	1281	Ambient Temperature	0.00 °C
Serial	MM-GPIB4	Relative Humidity	0.00 %
ID Number	19608-4	Pressure	0.00
Notes	Test front V/R ports	Test type	First

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	MC01	10/09/2018	10/09/2019
DUT MFC	Fluke	5700B	/03 WB	XXX	MC02	03/07/2019	04/07/2019
DC STD	Fluke	732B-3	9.9999323 VDC	±0.55 ppm	SV03	08/20/2016	08/20/2017
DC STD	Fluke	732B-3	9.9999288 VDC	±0.56 ppm	SV03	11/03/2017	11/03/2018
STDR	IET	1 Ohm	0.99997483	±0.17 ppm	SM02	11/03/2017	11/30/2018
STDR	ESI	SR104	10000.0530 KΩ	±0.15 ppm	SM01	10/30/2017	10/30/2018

MFC last calibrated	223.0 days ago	MFC since DCV ZERO	0.0 days ago
MFC since WBFLAT	11461.0 days ago	MFC since WBGAIN	223.0 days ago
MFC Confidence level	<b>24h 95% REL</b>	MFC Calibrate date	2018-10-09 00:00:00
MFC Calibrate date Zero	2019-05-20 00:00:00	Calibrate date WB Flatness	1988-10-01 00:00:00
Calibrate date WB Gain	2018-10-09 00:00:00	CAL CONST 6.5V reference voltage	6.8913631624
CAL CONST 13V reference voltage	13.7948160154	CAL CONST 22V range positive zero	398.17865
CAL CONST 22V range negative zero	398.1784	CAL CONST DAC Linearity	0.0
CAL CONST 10KOHM true output resistance	10000.0837165	CAL CONST 10KOHM standard resistance	10000.4488527
CAL CONST, Zero calibration temperature	23.1000003815	CAL CONST, All calibration temp	23.1000003815

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

Meter Info	Datron Instruments,1281,19608-4 ,890144-03.12	Last calibration date	N/A
Next calibration date	N/A	Test date	20 May 2019 23:37

Service information

Confidence test result?
0.0
Options
1,1,1,1,0,1,0
Reference
Direct MFC test, verification 5720MMA
DUT Condition
Test after reassembly

Test procedure : \$Id: d1281.py | Rev 1333 | 2019/05/21 03:35:48 clu \$

Source procedure : \$Id: f5720a.py | Rev 1196 | 2019/03/11 16:10:33 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 uncorrected 24-hour MFC output. DC voltage offset of DUT is nulled before FS tests.

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Test Description	Expected Value	Measured Value	Measurement Uncertainty	Lower Limit	Upper Limit	Deviation	DUT Spec	Test Status
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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 100uADC	0	<b>1.5E-10</b>						INFO
190 nADC	1.9E-07	<b>1.902E-07</b>	36882.00 ppm	1.829882E-07	1.970118E-07	1052.631 ppm	22 ppm	PASS 2.85 %
-190 nADC	-1.9E-07	<b>-1.896E-07</b>	36802.00 ppm	-1.969966E-07	-1.830034E-07	-2105.263 ppm	22 ppm	PASS 5.72 %
1 µADC	1E-06	<b>1.0003E-06</b>	7040.00 ppm	9.92938E-07	1.007062E-06	300.000 ppm	22 ppm	PASS 4.25 %
1.9 µADC	1.9E-06	<b>1.9003E-06</b>	3724.00 ppm	1.892883E-06	1.907117E-06	157.895 ppm	22 ppm	PASS 4.22 %
-1 µADC	-1E-06	<b>-9.997E-07</b>	7040.00 ppm	-1.007062E-06	-9.92938E-07	-300.000 ppm	22 ppm	PASS 4.25 %
-1.9 µADC	-1.9E-06	<b>-1.8996E-06</b>	3724.00 ppm	-1.907117E-06	-1.892883E-06	-210.526 ppm	22 ppm	PASS 5.62 %
10 µADC	1E-05	<b>1.00003E-05</b>	740.00 ppm	9.99238E-06	1.000762E-05	30.000 ppm	22 ppm	PASS 3.94 %
19 µADC	1.9E-05	<b>1.90004E-05</b>	408.00 ppm	1.899183E-05	1.900817E-05	21.053 ppm	22 ppm	PASS 4.90 %
-10 µADC	-1E-05	<b>-9.9996E-06</b>	740.00 ppm	-1.000762E-05	-9.99238E-06	-40.000 ppm	22 ppm	PASS 5.25 %
-19 µADC	-1.9E-05	<b>-1.89996E-05</b>	408.00 ppm	-1.900817E-05	-1.899183E-05	-21.053 ppm	22 ppm	PASS 4.90 %
100 µADC	0.0001	<b>9.99999E-05</b>	110.00 ppm	9.99868E-05	0.0001000132	-1.000 ppm	22 ppm	PASS 0.76 %
190 µADC	0.00019	<b>0.0001899997</b>	76.80 ppm	0.0001899812	0.0001900188	-1.579 ppm	22 ppm	PASS 1.60 %
-100 µADC	-0.0001	<b>-9.99995E-05</b>	110.00 ppm	-0.0001000132	-9.99868E-05	-5.000 ppm	22 ppm	PASS 3.79 %
-190 µADC	-0.00019	<b>-0.0001899995</b>	76.80 ppm	-0.0001900188	-0.0001899812	-2.632 ppm	22 ppm	PASS 2.66 %
Zero 1mADC	0	<b>3E-09</b>						INFO
1.0 mADC	0.001	<b>0.000999997</b>	38.00 ppm	0.00099994	0.00100006	-3.000 ppm	22 ppm	PASS 5.00 %
1.9 mADC	0.0019	<b>0.001899994</b>	34.20 ppm	0.001899893	0.001900107	-3.158 ppm	22 ppm	PASS 5.62 %
-1.0 mADC	-0.001	<b>-0.000999995</b>	38.00 ppm	-0.00100006	-0.00099994	-5.000 ppm	22 ppm	PASS 8.33 %
-1.9 mADC	-0.0019	<b>-0.0018999945</b>	34.20 ppm	-0.001900107	-0.001899893	-2.895 ppm	22 ppm	PASS 5.15 %
Zero 10mADC	0	<b>3.5E-08</b>						INFO
10 mADC	0.01	<b>0.01000002</b>	35.00 ppm	0.00999943	0.01000057	2.000 ppm	22 ppm	PASS 3.51 %
19 mADC	0.019	<b>0.01900006</b>	32.60 ppm	0.01899896	0.01900104	3.158 ppm	22 ppm	PASS 5.78 %
-10 mADC	-0.01	<b>-0.00999996</b>	35.00 ppm	-0.01000057	-0.00999943	-4.000 ppm	22 ppm	PASS 7.02 %
-19 mADC	-0.019	<b>-0.019</b>	32.60 ppm	-0.01900104	-0.01899896	0.000 ppm	22 ppm	PASS 0.00 %
Zero 100mADC	0	<b>1E-07</b>						INFO
100 mADC	0.1	<b>0.0999999</b>	48.00 ppm	0.0999917	0.1000083	-1.000 ppm	35 ppm	PASS 1.20 %
190 mADC	0.19	<b>0.19</b>	44.20 ppm	0.189985	0.190015	-0.000 ppm	35 ppm	PASS 0.00 %
-100 mADC	-0.1	<b>-0.1000001</b>	48.00 ppm	-0.1000083	-0.0999917	1.000 ppm	35 ppm	PASS 1.20 %
-190 mADC	-0.19	<b>-0.19000085</b>	44.20 ppm	-0.190015	-0.189985	4.474 ppm	35 ppm	PASS 5.65 %
Zero 1ADC	0	<b>-4E-06</b>						INFO
1.9 ADC	1.9	<b>1.9000025</b>	67.90 ppm	1.899829	1.900171	1.316 ppm	22 ppm	PASS 1.46 %
1.0 ADC	1	<b>1.0000205</b>	75.00 ppm	0.999815	1.000185	20.500 ppm	110 ppm	PASS 11.08 %
0.5 ADC	0.5	<b>0.500002</b>	90.00 ppm	0.4999	0.5001	4.000 ppm	110 ppm	PASS 2.00 %
-1.9 ADC	-1.9	<b>-1.899982</b>	67.90 ppm	-1.900171	-1.899829	-9.474 ppm	22 ppm	PASS 10.54 %
-1.0 ADC	-1	<b>-0.9999965</b>	75.00 ppm	-1.000185	-0.999815	-3.500 ppm	110 ppm	PASS 1.89 %
-0.5 ADC	-0.5	<b>-0.500008</b>	90.00 ppm	-0.5001	-0.4999	16.000 ppm	110 ppm	PASS 8.00 %

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	<b>1.0002E-05</b>	0.0900 %	9.982e-06	1.0018e-05	200.000 ppm	0.0900 %	INFO
50 µA AC @ 50 Hz	5e-05	<b>4.9983E-05</b>	0.0260 %	4.9942e-05	5.0058e-05	-340.000 ppm	0.0900 %	PASS 29.31 %
100 µA AC @ 50 Hz	0.0001	<b>9.9962E-05</b>	0.0180 %	9.9892e-05	0.000100108	-380.000 ppm	0.0900 %	PASS 35.19 %
190 µA AC @ 50 Hz	0.00019	<b>0.000189926</b>	0.0142 %	0.00018980200005	0.00019019799995	-389.474 ppm	0.0900 %	PASS 37.37 %
1.0 mA AC @ 50 Hz	0.001	<b>0.00099982</b>	0.0135 %	0.000999065	0.001000935	-180.000 ppm	0.0800 %	PASS 19.25 %
1.9 mA AC @ 50 Hz	0.0019	<b>0.00189973</b>	0.0118 %	0.0018982550001	0.0019017449999	-142.105 ppm	0.0800 %	PASS 15.47 %
10 mA AC @ 50 Hz	0.01	<b>0.009998</b>	0.0135 %	0.00999065	0.01000935	-200.000 ppm	0.0800 %	PASS 21.39 %
19 mA AC @ 50 Hz	0.019	<b>0.0189966</b>	0.0118 %	0.018982550001	0.019017449999	-178.947 ppm	0.0800 %	PASS 19.48 %
100 mA AC @ 50 Hz	0.1	<b>0.099969</b>	0.0125 %	0.0999075	0.1000925	-310.000 ppm	0.0800 %	PASS 33.51 %
190 mA AC @ 50 Hz	0.19	<b>0.189948</b>	0.0113 %	0.18982649998	0.19017350002	-273.684 ppm	0.0800 %	PASS 29.97 %
1.0 A AC @ 50 Hz	1.0	<b>0.99959</b>	0.0430 %	0.99857	1.00143	-0.0410 %	0.1000 %	PASS 28.67 %
1.9 A AC @ 50 Hz	1.9	<b>1.89921</b>	0.0392 %	1.8973550005	1.9026449995	-0.0416 %	0.1000 %	PASS 29.87 %
10 µA AC @ 60 Hz	1e-05	<b>1.0029E-05</b>	0.0900 %	9.982e-06	1.0018e-05	2900.000 ppm	0.0900 %	INFO
50 µA AC @ 60 Hz	5e-05	<b>4.9976E-05</b>	0.0260 %	4.9942e-05	5.0058e-05	-480.000 ppm	0.0900 %	PASS 41.38 %
100 µA AC @ 60 Hz	0.0001	<b>9.997E-05</b>	0.0180 %	9.9892e-05	0.000100108	-300.000 ppm	0.0900 %	PASS 27.78 %
190 µA AC @ 60 Hz	0.00019	<b>0.000189882</b>	0.0142 %	0.00018980200005	0.00019019799995	-621.053 ppm	0.0900 %	PASS 59.60 %
1.0 mA AC @ 60 Hz	0.001	<b>0.00099998</b>	0.0135 %	0.000999065	0.001000935	-20.000 ppm	0.0800 %	PASS 2.14 %
1.9 mA AC @ 60 Hz	0.0019	<b>0.00189916</b>	0.0118 %	0.0018982550001	0.0019017449999	-442.105 ppm	0.0800 %	PASS 48.14 %
10 mA AC @ 60 Hz	0.01	<b>0.0099921</b>	135.0	0.00999065	0.01000935	-790.000 ppm	800.0 ppm	PASS 84.49 %
19 mA AC @ 60 Hz	0.019	<b>0.018999</b>	0.0118 %	0.018982550001	0.019017449999	-52.632 ppm	0.0800 %	PASS 5.73 %
100 mA AC @ 60 Hz	0.1	<b>0.099956</b>	0.0125 %	0.0999075	0.1000925	-440.000 ppm	0.0800 %	PASS 47.57 %
190 mA AC @ 60 Hz	0.19	<b>0.189999</b>	0.0113 %	0.18982649998	0.19017350002	-5.263 ppm	0.0800 %	PASS 0.58 %
1.0 A AC @ 60 Hz	1.0	<b>0.99941</b>	0.0430 %	0.99857	1.00143	-0.0590 %	0.1000 %	PASS 41.26 %
1.9 A AC @ 60 Hz	1.9	<b>1.89953</b>	0.0392 %	1.8973550005	1.9026449995	-0.0247 %	0.1000 %	PASS 17.77 %
10 µA AC @ 1.0 kHz	1e-05	<b>1.0005E-05</b>	0.1440 %	9.9706e-06	1.00294e-05	0.0500 %	0.1500 %	INFO
50 µA AC @ 1.0 kHz	5e-05	<b>4.9988E-05</b>	0.0480 %	4.9901e-05	5.0099e-05	-0.0240 %	0.1500 %	PASS 12.12 %
100 µA AC @ 1.0 kHz	0.0001	<b>9.997E-05</b>	0.0360 %	9.9814e-05	0.000100186	-0.0300 %	0.1500 %	PASS 16.13 %
190 µA AC @ 1.0 kHz	0.00019	<b>0.000189941</b>	0.0303 %	0.00018965739998	0.00019034260002	-0.0311 %	0.1500 %	PASS 17.22 %
1.0 mA AC @ 1.0 kHz	0.001	<b>0.00099994</b>	0.0280 %	0.00099892	0.00100108	-60.000 ppm	0.0800 %	PASS 5.56 %
1.9 mA AC @ 1.0 kHz	0.0019	<b>0.00189994</b>	0.0228 %	0.0018980469995	0.0019019530005	-31.579 ppm	0.0800 %	PASS 3.07 %
10 mA AC @ 1.0 kHz	0.01	<b>0.0099991</b>	0.0225 %	0.00998975	0.01001025	-90.000 ppm	0.0800 %	PASS 8.78 %
19 mA AC @ 1.0 kHz	0.019	<b>0.0189987</b>	0.0199 %	0.018981020007	0.019018979993	-68.421 ppm	0.0800 %	PASS 6.85 %
100 mA AC @ 1.0 kHz	0.1	<b>0.09996</b>	0.0205 %	0.0998995	0.1001005	-400.000 ppm	0.0800 %	PASS 39.80 %
190 mA AC @ 1.0 kHz	0.19	<b>0.18993</b>	0.0188 %	0.18981220001	0.19018779999	-368.421 ppm	0.0800 %	PASS 37.27 %
1.0 A AC @ 1.0 kHz	1.0	<b>0.99943</b>	0.0430 %	0.99737	1.00263	-0.0570 %	0.2200 %	PASS 21.67 %
1.9 A AC @ 1.0 kHz	1.9	<b>1.89885</b>	0.0392 %	1.8950750005	1.9049249995	-0.0605 %	0.2200 %	PASS 23.35 %
10 µA AC @ 5.0 kHz	1e-05	<b>1.0014E-05</b>	0.1370 %	9.9713e-06	1.00287e-05	0.1400 %	0.1500 %	INFO
50 µA AC @ 5.0 kHz	5e-05	<b>5.0014E-05</b>	0.0410 %	4.99045e-05	5.00955e-05	0.0280 %	0.1500 %	PASS 14.66 %
100 µA AC @ 5.0 kHz	0.0001	<b>0.00010002</b>	0.0290 %	9.9821e-05	0.000100179	0.0200 %	0.1500 %	PASS 11.17 %
190 µA AC @ 5.0 kHz	0.00019	<b>0.000190039</b>	0.0233 %	0.00018967069998	0.00019032930002	0.0205 %	0.1500 %	PASS 11.84 %
1.0 mA AC @ 5.0 kHz	0.001	<b>0.00100021</b>	0.0280 %	0.00099892	0.00100108	210.000 ppm	0.0800 %	PASS 19.44 %
1.9 mA AC @ 5.0 kHz	0.0019	<b>0.0019004</b>	0.0228 %	0.0018980469995	0.0019019530005	210.526 ppm	0.0800 %	PASS 20.48 %
10 mA AC @ 5.0 kHz	0.01	<b>0.0100008</b>	0.0405 %	0.00998795	0.01001205	80.000 ppm	0.0800 %	PASS 6.64 %
19 mA AC @ 5.0 kHz	0.019	<b>0.0190012</b>	0.0379 %	0.018977600007	0.019022399993	63.158 ppm	0.0800 %	PASS 5.36 %
100 mA AC @ 5.0 kHz	0.1	<b>0.099922</b>	95.0	0.0999105	0.1000895	-780.000 ppm	800.0 ppm	PASS 87.15 %
190 mA AC @ 5.0 kHz	0.19	<b>0.189847</b>	78.421	0.18983310001	0.19016689999	-805.263 ppm	800.0 ppm	PASS 91.67 %

Test date	21 May 2019 00:44
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Lab temperature maintained +24°C ±2°C

Internal use only

Not validated

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