

<u>Testreport</u> 366602	Unit under Test	: Keithley 2000 Digital Multimeter
	Serial No	: 0123456
	Customer	: Muster AG
	Inventory No	: 789
	Date	: 01.06.2005
	Operator	: D. Richina

**TRACEABILITY INFORMATION**

Instruments used:	Serial No:	Inventory No:	Cal Due Date:
Fluke 5720A	461'0008	LAB-141	30.08.2005

All listed result are direct traceable to the Swiss Federal Office of Metrology, as far as listed in the uncertainty table of the SCS Certificate.

The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor  $k=2$ , which for a normal distribution corresponds to a coverage probability of approx 95%.

**PRE CALIBRATION DATA ONLY**

This certificate records the calibration status.  
Points where %Tol exceeds the adjustment threshold are marked with a "M".  
Points where %Tol exceeds the specification limit are marked with a "F".

Number of Test Marginal:	3
Number of Test Failed:	1

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TEST	RANGE	UUT INDICATED	SYSTEM ACTUAL	MODIFIER	ERROR	ERROR (%TOL)	M F
Actual Ambient Temp. 23.2 +/- 0.5 Deg C							
UUT ID\$: KEITHLEY INSTRUMENTS INC.,MODEL 2000,0123456,A12 /A02							
Prior Verification UUT stored SW Cal Date: 1999,04,26							
KEITHLEY 2000 Performance Verification:							
Tests Refer to 1 Year Specs as per Manual 2000-905-01							
DC Voltage Accuracy Test:							
100mV Range: (Rel. Zero)							
4	100	20.0002mV	20.00000mV		7.62 ppm	3	
5	100	-20.0002mV	-20.00000mV		11.4 ppm	5	
6	100	50.0007mV	50.00000mV		14.2 ppm	12	
7	100	-50.0003mV	-50.00000mV		6.33 ppm	5	
8	100	100.0011mV	100.00000mV		11.0 ppm	13	
9	100	-100.0009mV	-100.00000mV		9.19 ppm	11	
1V Range:							
10	1	0.200005V	0.2000000V		23.4 ppm	36	
11	1	-0.199999V	-0.2000000V		-2.74 ppm	4	
12	1	0.500008V	0.5000000V		15.0 ppm	34	
13	1	-0.500001V	-0.5000000V		2.09 ppm	5	
14	1	1.000013V	1.0000000V		13.5 ppm	36	
15	1	-1.000006V	-1.0000000V		6.40 ppm	17	
10V Range:							
16	10	2.00002V	2.000000V		8.39 ppm	15	
17	10	-2.00001V	-2.000000V		5.77 ppm	11	
18	10	5.00004V	5.000000V		7.56 ppm	19	
19	10	-5.00004V	-5.000000V		7.35 ppm	18	
20	10	10.00008V	10.000000V		7.82 ppm	22	
21	10	-10.00007V	-10.000000V		7.23 ppm	21	
100V Range:							
22	100	19.9998V	20.00000V		-10.9 ppm	15	
23	100	-19.9998V	-20.00000V		-12.3 ppm	16	
24	100	49.9994V	50.00000V		-11.4 ppm	20	
25	100	-49.9996V	-50.00000V		-8.31 ppm	15	
26	100	99.9991V	100.00000V		-8.93 ppm	18	
27	100	-99.9991V	-100.00000V		-9.22 ppm	18	
1000V Range:							
28	1000	199.998V	200.0000V		-11.8 ppm	16	
29	1000	-199.998V	-200.0000V		-11.5 ppm	15	
30	1000	499.995V	500.0000V		-10.8 ppm	19	
31	1000	-499.996V	-500.0000V		-8.60 ppm	15	
32	1000	999.994V	1000.0000V		-6.22 ppm	12	
33	1000	-999.996V	-1000.0000V		-4.43 ppm	9	

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DC Voltage Linearity Test:							
10V Range:							
34	10	1.11113V	1.111110V		19.6 ppm	26	
35	10	2.22225V	2.222220V		11.6 ppm	22	
36	10	3.33336V	3.333330V		9.15 ppm	20	
37	10	4.44448V	4.444440V		8.77 ppm	21	
38	10	5.55560V	5.555550V		8.24 ppm	21	
39	10	6.66671V	6.666660V		8.06 ppm	22	
40	10	7.77783V	7.777770V		8.01 ppm	22	
41	10	8.88895V	8.888880V		7.74 ppm	22	
42	10	10.00007V	9.999990V		7.59 ppm	22	
43	10	11.11119V	11.111110V		7.31 ppm	21	
4-WIRE Resistance Test:							
100 Ohms Range:							
44	100	18.9944Ω	18.99538Ω		-49.3 ppm	16	
45	100	99.9887Ω	99.99279Ω		-40.7 ppm	29	
1 kOhm Range:							
46	1	0.189988kΩ	0.18999675kΩ		-44.4 ppm	29	
47	1	0.999880kΩ	0.9999308kΩ		-50.9 ppm	46	
10 kOhm Range:							
48	10	1.89971kΩ	1.8999738kΩ		-0.014 %	89	M
49	10	9.99855kΩ	9.999935kΩ		-0.014 %	126	F
100 kOhm Range:							
50	100	18.9975kΩ	18.999154kΩ		-86.1 ppm	56	
51	100	99.9926kΩ	100.00159kΩ		-90.1 ppm	82	M
1 MOhm Range:							
52	1	0.189983MΩ	0.18999829MΩ		-77.9 ppm	51	
53	1	0.999930MΩ	1.0000228MΩ		-93.0 ppm	85	M
2-WIRE Resistance Test:							
10 MOhms Range:							
54	10	1.89994MΩ	1.9000121MΩ		-38.3 ppm	8	
55	10	9.99901MΩ	9.999784MΩ		-77.0 ppm	19	
100 MOhm Range:							
56	100	18.9954MΩ	18.997306MΩ		-0.010 %	6	
57	100	99.9529MΩ	99.98834MΩ		-0.035 %	23	

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AC Voltage Test:							
100mV Range:							
58	100	99.9832mV	100.00000mV	10Hz	-0.017 %	19	
59	100	9.9972mV	10.00000mV	1kHz	-0.028 %	8	
60	100	100.0018mV	100.00000mV	50kHz	18.2 ppm	1	
1V Range:							
61	1	1.000000V	1.0000000V	1kHz	0.16 ppm	0	
62	1	1.000140V	1.0000000V	50kHz	0.014 %	8	
63	1	1.000646V	1.0000000V	100kHz	0.065 %	10	
64	1	1.004948V	1.0000000V	300kHz	0.492 %	11	
10V Range:							
65	10	9.99593V	10.000000V	1kHz	-0.041 %	45	
66	10	3.19762V	3.200000V	50kHz	-0.074 %	27	
67	10	3.16709V	3.200000V	300kHz	-1.039 %	19	
68	10	9.99757V	10.000000V	50kHz	-0.024 %	14	
100V Range:							
69	100	99.9572V	100.00000V	200Hz	-0.043 %	48	
70	100	99.9575V	100.00000V	1kHz	-0.043 %	47	
71	100	99.9600V	100.00000V	50kHz	-0.040 %	6	
750V Range:							
72	750	699.767V	700.0000V	1kHz	-0.033 %	36	
73	750	209.789V	210.0000V	50kHz	-0.101 %	60	
DC Current Test:							
10mA Range:							
74	10	0.00005mA	0.000000mA		0.000048mA	12	
75	10	2.00037mA	2.000000mA		0.019 %	27	
76	10	-2.00028mA	-2.000000mA		0.014 %	20	
77	10	10.00161mA	10.000000mA		0.016 %	30	
78	10	-10.00161mA	-10.000000mA		0.016 %	30	
100mA Range:							
79	100	0.0022mA	0.00000mA		0.00218mA	5	
80	100	100.0023mA	100.00000mA		23.3 ppm	3	
81	100	-99.9958mA	-100.00000mA		-41.7 ppm	5	
1A Range:							
82	1	0.000003A	0.0000000A		0.0000030A	8	
83	1	1.000008A	1.0000000A		8.05 ppm	1	
84	1	-1.000006A	-1.0000000A		5.60 ppm	1	
3A Range:							
85	3	0.00000A	0.000000A		0.000000A	0	
86	3	2.09995A	2.100000A		-25.1 ppm	2	
87	3	-2.09993A	-2.100000A		-35.2 ppm	2	

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AC Current Test:							
1A Range:							
88	1	0.100045A	0.1000000A	50Hz	0.045 %	9	
89	1	0.499730A	0.5000000A	50Hz	-0.054 %	30	
90	1	0.999681A	1.0000000A	50Hz	-0.032 %	23	
91	1	0.999804A	1.0000000A	1kHz	-0.020 %	14	
92	1	0.999637A	1.0000000A	5kHz	-0.036 %	26	
3A Range:							
93	3	1.99974A	2.000000A	50Hz	-0.013 %	5	
94	3	1.99990A	2.000000A	1kHz	-51.1 ppm	2	
95	3	1.99949A	2.000000A	5kHz	-0.025 %	11	
DCV Zero Test: (Rear Inputs)							
100mV DC Range:							
96	100	-0.0011mV	0.00000mV		-0.00105mV	30	
1V DC Range:							
97	1	-0.000001V	0.0000000V		-0.0000006V	8	
10V DC Range:							
98	10	0.00000V	0.000000V		0.000003V	6	
100V DC Range:							
99	100	-0.0000V	0.00000V		-0.00003V	4	
1000V DC Range:							
100	1000	-0.000V	0.0000V		-0.0005V	8	
Resistance Zero Test: (Rear Inputs)							
100 Ohm Range:							
101	100	0.0000Ω	0.00000Ω		0.00001Ω	0	
1 kOhm Range:							
102	1	0.000001kΩ	0.0000000kΩ		0.0000008kΩ	8	
10 kOhm Range:							
103	10	0.00001kΩ	0.000000kΩ		0.000006kΩ	6	
100 kOhm Range:							
104	100	0.0001kΩ	0.00000kΩ		0.00010kΩ	10	
1 MOhm Range:							
105	1	0.000000MΩ	0.0000000MΩ		0.0000003MΩ	3	
Noise Test: 1V DC Range (Rear Inputs)							
106	1	0V	0.0V		0.0V	0	

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K - Type TC Temperature Test:							
108		0.054Deg_C	0.0000Deg_C	@0Deg_Comp	0.0535Deg_C	11	
109		10.027Deg_C	10.0000Deg_C	@0Deg_Comp	0.269 %	5	
110		50.079Deg_C	50.0000Deg_C	@0Deg_Comp	0.159 %	16	
111		100.081Deg_C	100.0000Deg_C	@0Deg_Comp	0.081 %	16	
112		200.095Deg_C	200.0000Deg_C	@0Deg_Comp	0.047 %	19	
113		500.145Deg_C	500.0000Deg_C	@0Deg_Comp	0.029 %	29	
114		1000.243Deg_C	1000.0000Deg_C	@0Deg_Comp	0.024 %	49	
J - Type TC Temperature Test:							
115		0.046Deg_C	0.0000Deg_C	@0Deg_Comp	0.0462Deg_C	9	
116		10.032Deg_C	10.0000Deg_C	@0Deg_Comp	0.316 %	6	
117		50.055Deg_C	50.0000Deg_C	@0Deg_Comp	0.110 %	11	
118		100.065Deg_C	100.0000Deg_C	@0Deg_Comp	0.065 %	13	
119		200.079Deg_C	200.0000Deg_C	@0Deg_Comp	0.039 %	16	
120		500.108Deg_C	500.0000Deg_C	@0Deg_Comp	0.022 %	22	
121		749.981Deg_C	750.0000Deg_C	@0Deg_Comp	-24.9 ppm	4	
T - Type TC Temperature Test:							
122		0.061Deg_C	0.0000Deg_C	@0Deg_Comp	0.0612Deg_C	12	
123		10.001Deg_C	10.0000Deg_C	@0Deg_Comp	0.010 %	0	
124		50.099Deg_C	50.0000Deg_C	@0Deg_Comp	0.198 %	20	
125		100.085Deg_C	100.0000Deg_C	@0Deg_Comp	0.085 %	17	
126		200.079Deg_C	200.0000Deg_C	@0Deg_Comp	0.039 %	16	
127		350.091Deg_C	350.0000Deg_C	@0Deg_Comp	0.026 %	18	

No optional Scanner Module installed!

End of KEITHLEY 2000: C/L Verification & Adj. Procedure