校准

在校准的周期内，或者任何时候仪器指示超出了公差的验证测试

都要进行仪器的调整或校准。定期进行校准，仅仅能够保证表的精度在规格的范围内。1 年的校准周期为大多数的仪器所推荐。如果超出一年的校准周期，表的精度将不能保证在规格书的范围内。

表的调节仅仅允许在远程接口来进行一系列的调节步骤。该远程程序指导设备提供一系列短路，开路，电压，电流和电容（只有 8846A 才有该功能）功能给台表。该台表内部产生必要的调整使表达到规格书的要求，因此没有必要提供内部的机械调整。

使用一个自动电脑控制程序，关于表的校准和验证过程大约需要 60 分钟的时间。校准程序的样本已经列于手册的稍后章节中，校准程序则可以在 www.fluke.com 下载来校表。

为防止意外和未经授权的调整，该表的校准功能已经加密，该安全密码必须通过面板输入或者远程接口输入，而且必须输入正确的密码才能调整表。

解锁安全码进行校准

通过前面板解锁表

1. 按“Instr/Setup”键；2.按”CAL”键；3.按“Unlock Cal”键；
   按有标签的软键“——”减字符；软键“++”增加字符；该字符能从 0-9，A-Z，区号（.），破折号（-）；移到下一个字符按“——>键。
   4.按“Enter”键确认密码并解锁仪器。
   关于解锁表的信息的命令在 8845/6 编程手册中的“支持 SCPI 命令”部分找出“Calibration：secure:state”。该表的出厂解锁密码是：FLUKE884X。

远程解锁表

解锁表，传以下指令给表

“CAL：SEC：STAT OFF，FLUKE884X”

重新加锁表，传以下命令给表。

“CAL：SEC：STAT ON，FLUKE884X”

改变校准密码

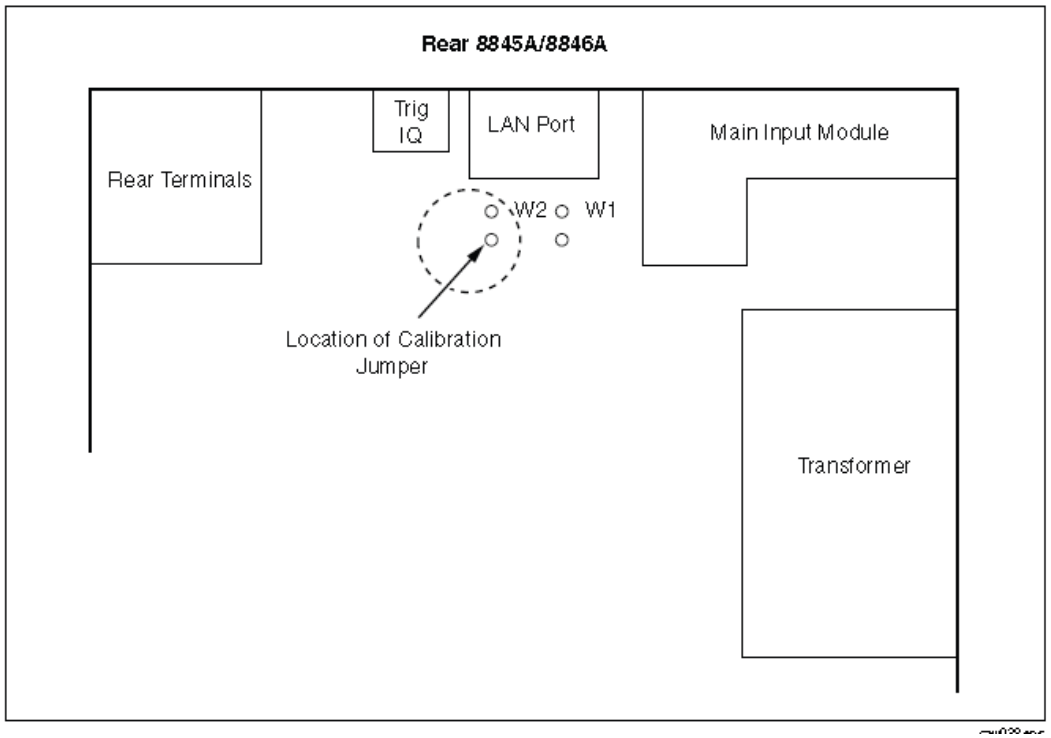
可以通过远程接口改变校准密码，关于改变校准密码的信息在 8845/6 编程手册中的“支持 SCPI 命令”中找出“Calibration：SECURE：CODE。

复位校准密码

如果校准密码已经丢失或者忘记了，可以通过下面的方法来复位到 FLUKE884X；

注意：执行下面的步骤前，尝试一下工厂默认的密码 FLUKE884X.

1. 拆开仪器外壳。
2. 连接跳线到 W2，如下图：



3. 重新连接电源线。
4. 打开表，开机后，该密码已经自动回复到 Fluke884X；
5. 关机并断开电源线；
6. 移除连接在 W2 的跳线；
7. 装好表的外壳；

改变校准日期

8845A 可以远程改变校准日期；

注意：发出以下指令时，必须在校准模式下；

“CAL：DATE mm/dd/yyyy”

当发出“CAL：REC”指令后，8846A 将自动更新日期；

详情请参看编程手册；

要求校准的设备

校准要求的设备（类似的设备）列于下表

Table 3-1. Required Test Equipment

Function	Instrument Type	Model	Comments
Volts dc	Standard	Fluke 5520A	Must be characterized with 8508A
	8½ digit meter	Fluke 8508A	Used to characterize the 5520A
	4-wire short	Fluke low thermal 4-wire short or equivalent	Fluke PN 2653346
	Alternate standard[1]	Fluke 5720A	
Volts ac	Standard	Fluke 5520A	Must be characterized with 8508A
	8½ digit meter	Fluke 8508A	Used to characterize the 5520A. Note: TURs <4:1 at 1 V, 10 V, and 100 V at 20 kHz
	4-wire short	Fluke low thermal 4-wire short or equivalent	Fluke PN 2653346
	Alternate standard[1]	Fluke 5720A	
Frequency	Standard	Fluke 5520A	
	Alternate standard	Fluke 5520A with any scope option	
	Alternate standard	Function generator	Specifications include0.075 % frequency accuracy from 3 – 40 Hz and 0.0025 % accuracy for frequencies up to 1 MHz

校准过程

8845 和 8846 的调整略有不同，两个都分为四个区域：开路调节，零点调节，后面板零点调节和增益调节；

下表列出了步骤号码，调整的描述，测量调节类型（开路，零点，增益调节），表的值/被调节的档位，调节信号的幅度和调节信号要求的频率。

Table 3-20. *8845A/8846A* Adjustment Steps

Step	Modes	Value Range	Input Signal	Description	Series
Open					
0	ORES	100000000	open	OHM 100M open terminals	Y
1	ORES	1000000000	open	OHM 1G open terminals (8846A only)	Y
2	ZCAP	1.00E-09	open	CAP 1 nF open terminals (8846A only)	N
ACV Zero					
3	ZVAC	100.0E-3	4-wire low-thermal short	AC 100 mV	Y
4	ZVACS	100.0E-3	4-wire low-thermal short	AC 100 mV	Y
5	ZVAC	1	4-wire low-thermal short	AC 1V	Y
6	ZVACS	1	4-wire low-thermal short	AC 1V	Y
7	ZVAC	10	4-wire low-thermal short	AC 10V	Y
8	ZVACS	10	4-wire low-thermal short	AC 10V	Y
9	ZVAC	100	4-wire low-thermal short	AC 100V	Y
10	ZVACS	100	4-wire low-thermal short	AC 100V	Y
11	ZVAC	1000	4-wire low-thermal short	AC 1000V	Y
12	ZVACS	1000	4-wire low-thermal short	AC 1000V	N
DCV Zero					
13	ZVDC	1000	4-wire low-thermal short	DC 1000V	Y
14	ZVDC	100	4-wire low-thermal short	DC 100V	Y
15	ZVDC	10	4-wire low-thermal short	DC 10V	Y
16	ZVDC	1	4-wire low-thermal short	DC 1V	Y
17	ZVDC	0.1	4-wire low-thermal short	DC 100mV	N
18	DFVDC	0.1	4-wire low-thermal short	DC 100mV	N
Ohm Zero					
19	ZRES	10000000	4-wire low-thermal short	4W Ohm 10 MOHM	Y
20	ZRES	1000000	4-wire low-thermal short	4W 1 MOHM	Y
21	ZRES	100000	4-wire low-thermal short	4W 100 kOHM	Y
22	ZRES	10000	4-wire low-thermal short	4W 10 kOHM	Y
23	ZRES	1000	4-wire low-thermal short	4W 1 kOHM	Y
24	ZRES	100	4-wire low-thermal short	4W 100 OHM	Y

Step	Modes	Value Range	Input Signal	Description	Series
25	ZRES	10	4-wire low-thermal short	4W 10 OHM (8846A only)	N
Rear Ω Zero					
26	ZRES	100000	4-wire low-thermal short	4W 100 kOHM rear input	Y
27	ZRES	10000	4-wire low-thermal short	4W 10 kOHM rear input	Y
28	ZRES	1000	4-wire low-thermal short	4W 1 kOHM rear input	Y
29	ZRES	100	4-wire low-thermal short	4W 100 OHM rear input	Y
30	ZRES	10	4-wire low-thermal short	4W 10 OHM rear input (8846A only)	N
Rear DCV Zero					
31	ZVDC	1	4-wire low-thermal short	DC 1V rear input	Y
32	ZVDC	0.1	4-wire low-thermal short	DC 100 mV rear input	N
Low I Zero					
33	ZIDC	100.0E-3	100mA to Lo short	DC 100 mA	Y
34	ZIDC	1.0E-3	100mA to Lo short	DC 1 mA	Y
35	ZIDC	10.0E-3	100mA to Lo short	DC 10 mA	Y
36	ZIDC	100.0E-6	100mA to Lo short	DC 100 uA	Y
37	ZIAC	0.0	100mA to Lo short	AC 100 uA	Y
38	ZIACS	0.0	100mA to Lo short	AC 100 uA	Y
39	ZIAC	1.0E-3	100mA to Lo short	AC 1 mA	Y
40	ZIACS	1.0E-3	100mA to Lo short	AC 1 mA	Y
41	ZIAC	10.0E-3	100mA to Lo short	AC 10 A	Y
42	ZIACS	10.0E-3	100mA to Lo short	AC 10 mA	Y
43	ZIAC	100.0E-3	100mA to Lo short	AC 100 mA	Y
44	ZIACS	100.0E-3	100mA to Lo short	AC 100 mA	N
HI I Zero					
45	ZIDC	10	10 A to Lo short	DC 10 A	Y
46	ZIDC	1	10 A to Lo short	DC 1 A	Y
47	ZIAC	1	10 A to Lo short	AC 1 A	Y

Step	Modes	Value Range	Input Signal	Description	Series
48	ZIACS	1	10 A to Lo short	AC 1 A	Y
49	ZIAC	10	10 A to Lo short	AC 10 A	Y
AC	ZIACS	10	10 A to Lo short	AC 10 A	N
50	Linearity				
51	ACLIN	1.19	1.19 @1200 Hz	AC 1 V	N
52	ACLIN	0.8	0.8 @1200 Hz	AC 1 V	N
53	ACLIN	0.4	0.4 @1200 Hz	AC 1 V	N
54	ACLIN	0.005	0.005 @1200 Hz	AC 1 V	N
ACV Gain					
55	GVAC	0.1	0.1 @1200 Hz	AC 100 mV	Y
56	GVACS	0.1	0.1 @1200 Hz	AC 100 mV	N
57	ACPOLE	0.1	0.1 @50000 Hz	A 100 mV	N
58	GVAC	1	1 @1200 Hz	AC 1 V	Y
59	GVACS	1	1 @1000 Hz	AC 1 V	N
60	FVAC	1	1 @10 Hz	AC 1 V	N
61	ACPOLE	1	1 @50000 Hz	AC 1 V	N
62	GVAC	10	10 @1200 Hz	AC 10 V	Y
63	GVACS	10	10 @1200 Hz	AC 10 V	N
64	ACPOLE	10	10 @50000 Hz	AC 10 V	N
65	GVAC	100	100 @1200 Hz	AC 100 V	Y
66	GVACS	100	100 @1200 Hz	AC 100 V	N
67	ACPOLE	100	100 @50000 Hz	AC 100 V	N
68	GVAC	1000	1000 @1200 Hz	AC 1000 V (8845A use 750V on 750V range)	Y
69	GVACS	1000	1000 @1200 Hz	AC 1000 V (8845A use 750V on 750V range)	N
70	ACPOLE	1000	329 @50000 Hz	AC 1000 V (use 8845A 750V range)	N
VDC Gain					
71	GVDC	1000	1000	DC 1000 V	N
72	GVDC	-1000	-1000	DC 1000 V	N
73	GVDC	100	100	DC 100 V	N
74	GVDC	-100	-100	DC 100 V	N

Step	Modes	Value Range	Input Signal	Description	Series
75	GVDC	10	10	DC 10 V	N
76	GVDC	-10	-10	DC 10 V	N
77	GVDC	1	1	DC 1 V	N
78	GVDC	-1	-1	DC 1 V	N
79	GVDC	0.1	0.1	DC 100 mV	N
80	GVDC	-0.1	-0.1	DC 100 mV	N
HI IDC Gain					
81	GIDC	1	1	DC 1 A	N
82	GIDC	-1	-1	DC 1 A	N
83	GIDC	10	10	DC 10 A	N
84	GIDC	-10	-10	DC 10 A	N
HI IAC Gain					
85	GIAC	10	10	AC 10 A	Y
86	GIACS	10	10	AC 10 A	N
87	GIAC	1	1	AC 1 A	Y
88	GIACS	1	1	AC 1 A	N
Low IAC Gain					
89	GIAC	100.0E-3	100.0E-3	AC 100 mA	Y
90	GIACS	100.0E-3	100.0E-3	AC 100 mA	N
91	GIAC	10.0E-3	10.0E-3	AC 10 mA	Y
92	GIACS	10.0E-3	10.0E-3	AC 10 mA	N
93	GIAC	1.0E-3	1.0E-3	AC 1 mA	Y
94	GIACS	1.0E-3	1.0E-3	AC 1 mA	N
95	GIAC	100.0E-6	100.0E-6	AC 100 uA	N
96	GIACS	100.0E-6	100.0E-6	AC 100 uA	N
Lo IDC Gain					
97	GIDC	100.0E-6	100.0E-6	DC 100 uA	N
98	GIDC	-100.0E-6	-100.0E-6	DC 100 uA	N
99	GIDC	1.0E-3	1.0E-3	DC 1 mA	N
100	GIDC	-1.0E-3	-1.0E-3	DC 1 mA	N

Step	Modes	Value Range	Input Signal	Description	Series
101	GIDC	10.0E-3	10.0E-3	DC 10 mA	N
102	GIDC	-10.0E-3	-10.0E-3	DC 10 mA	N
103	GIDC	100.0E-3	100.0E-3	DC 100 mA	N
104	GIDC	-100.0E-3	-100.0E-3	DC 100 mA	N
Ω Gain					
105	GRES	100000000	100000000	R 100M Ω	N
106	GRES	10000000	10000000	4W 10M Ω	N
107	GRES	1000000	1000000	4W 1M Ω	N
108	GRES	100000	100000	4W 100 kΩ	N
109	GRES	10000	10000	4W 10 kΩ	N
110	GRES	1000	1000	4W 1 kΩ	N
111	GRES	100	100	4W 100 Ω	N
112	GRES	10	10	4W 10 Ω (8846A only)	N
Misc Gain					
113	GRES	1000000000	1000000000	R1G Ω (8846A only)	N
114	GCAP1	10.0E-9	10.0E-9	C10NF (8846A only)	Y
115	GCAP2	10.0E-9	10.0E-9	C10NF (8846A only)	N

一旦熟悉上面的一系列校准设置，使用“CAL OFF”指令能加快校准的时间，该指令允许仪器自动走向系列中的下一个逻辑步骤。最后一行能识别在该系列中的步骤并可以自动运行，列如：开路步骤中的所有步骤的运行可以输入：

CAL：CAL ORES，1000000000

Cal？ Off

另外一列是自动运行 ACV 零点校准步骤的 3 到 12 步；

CAL：CAL ZVAC 100.OE-3

CAL？ Off

注意：

使用 CAL？命令没有没有理由关闭信号步骤的特性；

AC 线性步骤必须运行 A C 增益步骤去完成 AC 校准；

终止校准程序

注意：

当表弹出一个写新的校准因数到内存可能损坏校准因数内存时要终止校准程序。

终止校准程序，停止校准程序或者通过远程接口发出一个设备清除指令可以终止校准；

校准因数不会保存，直到表收到一个新的记录指令；

校准程序样本

以下显示一个使用一些指令去调整 1V ACV 部分的 IEEE-488 程序，注意 ACV 线性调节必须进行增益调节后才能进行；

INIT PORT 0<CR>

CLEAR PORT 0<CR>

Enable Calibration

PRINT @<address of meter>, "CAL:SEC:STAT OFF, FLLUKE448X"

Zeros

Calibrate AC Linearity Set input value to 1.19V@1200Hz

V@1200Hz

PRINT @<address of meter>, "CAL:VAL ACLIN,1.19"
PRINT @<address of meter>, "CAL? ON"
INPUT LINE @<address of meter>, A$
Calibrate AC Linearity Set input value to 0.8V@1200Hz
0.8V@1200Hz
PRINT @<address of meter>, "CAL:VAL ACLIN,0.8"
PRINT @<address of meter>, "CAL? ON"
INPUT LINE @<address of meter>, A$
Calibrate AC Linearity Set input value to 0.4V@1200Hz
0.4V@1200Hz
PRINT @<address of meter>, "CAL:VAL ACLIN,0.4"
PRINT @<address of meter>, "CAL? ON"
INPUT LINE @<address of meter>, A$
Calibrate AC Linearity Set input value to 0.05V@1200Hz
0.005V@1200Hz
PRINT @<address of meter>, "CAL:VAL ACLIN,0.005"
PRINT @<address of meter>, "CAL? ON"
INPUT LINE @<address of meter>, A$PRINT @<address of meter>, "CAL:VAL"
ACV Gain for 1V
PRINT @<address of meter>, "CAL:VAL ZVAC,1"
PRINT @<address of meter>, "CAL? ON"
INPUT LINE @<address of meter>, A$
PRINT @<address of meter>, "CAL:VAL ZVACS,1"
PRINT @<address of meter>, "CAL? ON"
INPUT LINE @<address of meter>, A$
Disable Calibration
PRINT @<address of meter>, "CAL:SEC:STAT ON, FLUKE884X”

校准程序实例（以下是 8845/46 的一个校准程序的实例）

8845A/8846A
Calibration Manual
B-2
CAL? ON
CAL:VAL ZVAC,10
CAL? ON
CAL:VAL ZVACS,10
CAL? ON
CAL:VAL ZVAC,100
CAL? ON
CAL:VAL ZVACS,100
CAL? ON
CAL:VAL ZVAC,1000
CAL? ON
CAL:VAL ZVACS,1000
CAL? ON
CAL:VAL ZVDC,1000

CAL? ON
CAL:VAL ZVDC,100
CAL? ON
CAL:VAL ZVDC,10
CAL? ON
CAL:VAL ZVDC,1
CAL? ON
CAL:VAL ZVDC,0.1
CAL? ON
Four 50/60 Hz zero adjust steps - OutGuard version 2.0 and above
CAL:VAL DFVDC60, 100E-3
CAL? ON
CAL:VAL DFVDC60_1, 100E-3
CAL? ON
CAL:VAL DFVDC50, 100E-3
CAL? ON
CAL:VAL DFVDC50_1, 100E-3
CAL? ON
end comment
CAL:VAL ZRES,10000000
CAL? ON
CAL:VAL ZRES,1000000
CAL? ON
CAL:VAL ZRES,100000
CAL? ON
CAL:VAL ZRES,10000
CAL? ON
CAL:VAL ZRES,1000
CAL? ON
CAL:VAL ZRES,100
CAL? ON
CAL:VAL ZRES,10
CAL? ON
Three Ratio zero adjust steps - OutGuard version 2.0 and above
CAL:VAL ZVDCREF, 10
CAL? ON
CAL:VAL ZVDCREF, 1
CAL? ON
CAL:VAL ZVDCREF, 100E-3
CAL? ON
CAL:REC
Appendices
Example Adjustment Program B
B-3
end comment
Rear short adjust - press the F/R switch to REAR - OutGuard version 2.0
and above
CAL:VAL ZRESR,100000
CAL? ON

```
CAL:VAL ZRESR,10000
CAL? ON
CAL:VAL ZRESR,1000
CAL? ON
CAL:VAL ZRESR,100
CAL? ON
CAL:VAL ZRESR,10
CAL? ON
# end comment
# Two dcV rear zero adjust steps - OutGuard version 2.0 and above
CAL:VAL ZVDCR,1
CAL? ON
CAL:VAL ZVDCR,100E-3
CAL? ON
# end comment
# Two rear Ratio zero adjust steps - OutGuard version 2.0 and above
CAL:VAL ZVDCRREF,1
CAL? ON
CAL:VAL ZVDCRREF,100E-3
CAL? ON
# end comment
## Front adjust - press the F/R switch to FRONT
# 400 mA dc Current zero adjust steps - OutGuard version 2.0 and above
CAL:VAL ZIDC,400.0E-3
CAL? ON
# end comment
# Front dc Current zeros adjust
CAL:VAL ZIDC,100.0E-3
CAL? ON
CAL:VAL ZIDC,1.0E-3
CAL? ON
CAL:VAL ZIDC,10.0E-3
CAL? ON
CAL:VAL ZIDC,100.0E-6
CAL? ON
CAL:REC
# Front ac Current zeros adjust
CAL:VAL ZIAC,0.0
CAL? ON
CAL:VAL ZIACS,0.0
CAL? ON
CAL:VAL ZIAC,1.0E-3
CAL? ON
CAL:VAL ZIACS,1.0E-3
CAL? ON
CAL:VAL ZIAC,10.0E-3
CAL? ON
CAL:VAL ZIACS,10.0E-3
CAL? ON
```

CAL:VAL ZIAC,100.0E-3
8845A/8846A
Calibration Manual
B-4
CAL? ON
CAL:VAL ZIACS,100.0E-3
CAL? ON
Two 400 mA ac zero adjust steps - OutGuard version 2.0 and above
CAL:VAL ZIAC,400.0E-3
CAL? ON
CAL:VAL ZIACS,400.0E-3
CAL? ON
#
CAL:VAL ZIDC,10
CAL? ON
CAL:VAL ZIDC,1
CAL? ON
CAL:VAL ZIAC,1
CAL? ON
CAL:VAL ZIACS,1
CAL? ON
CAL:VAL ZIAC,10
CAL? ON
CAL:VAL ZIACS,10
CAL? ON
CAL:REC
Calibrate AC Linearity
1.19V@1200Hz
set calibrator to output 1.19V@1200Hz
CAL:VAL ACLIN,1.19
CAL? ON
set calibrator to output 0.8V@1200Hz
0.8V@1200Hz
CAL:VAL ACLIN,0.8
CAL? ON
set calibrator to output 0.4 V@1200Hz
0.4V@1200Hz
CAL:VAL ACLIN,0.4
CAL? ON
set calibrator to output 0.005V@1200Hz
0.005V@1200Hz
CAL:VAL ACLIN,0.005
CAL? ON
CAL:REC
Calibrate 100 mV AC Gain @1200 Hz
set calibrator to output 0.1 V@1200Hz
100 mV AC range
CAL:VAL GVAC,0.1
CAL? ON

Calibrate 100 mV AC Gain @1200 Hz
100 mV AC Gain
CAL:VAL GVACS,0.1
CAL? ON
Calibrate 100 mV AC Pole @50000 Hz
set calibrator to output 0.1 V@50000Hz
100 mV AC Pole
CAL:VAL ACPOLE,0.1
CAL? ON
Calibrate 1 V AC Gain @1200 Hz

set calibrator to output 1.0 V@1200Hz
1 V AC Gain
CAL:VAL GVAC,1
CAL? ON
Calibrate 1 V AC Gain @1000 Hz
set calibrator to output 1.0 V@1000Hz
1 V AC Gain
CAL:VAL GVACS,1
CAL? ON
Calibrate 1 V AC Slow @10 Hz
set calibrator to output 1.0 V@10Hz
AC Slow
CAL:VAL FVAC,1
CAL? ON
Calibrate 1 V AC Pole @50000 Hz
set calibrator to output 1.0 V@50000Hz
1 V AC Fast
CAL:VAL ACPOLE,1
CAL? ON
Calibrate 10 V AC Gain @1200 Hz
set calibrator to output 10.0 V@1200Hz
10 V AC Gain
CAL:VAL GVAC,10
CAL? ON
Calibrate 10 V AC Gain @1200 Hz
10 V AC Gain
CAL:VAL GVACS,10
CAL? ON
Calibrate 10 V AC Pole @50000 Hz
set calibrator to output 10.0 V@50000Hz
10 V AC Pole
CAL:VAL ACPOLE,10
CAL? ON
Calibrate 100 V AC Gain @1200 Hz
set calibrator to output 100.0 V@1200Hz
100 V AC Gain

CAL:VAL GVAC,100
CAL? ON
Calibrate 100 V AC Gain @1200 Hz
100 V AC Gain
CAL:VAL GVACS,100
CAL? ON
Calibrate 100 V AC Pole @50000 Hz
set calibrator to output 100.0 V@50000Hz
100 V AC Pole
CAL:VAL ACPOLE,100
CAL? ON
#
8845A - uncomment if adjusting 8845A
#
Calibrate 750 V AC Gain @1200 Hz
set calibrator to output 750.0 V@1200Hz
750 V AC Gain
#CAL:VAL GVAC,750
#CAL? ON

Calibrate 750 V AC Gain @1200 Hz
750 V AC Gain
#CAL:VAL GVACS,750
#CAL? ON
end comment
#
8846A - uncomment if adjusting 8846A
#
Calibrate 1000 V AC Gain @1200 Hz
set calibrator to output 1000.0 V@1200Hz
1000 V AC Gain
CAL:VAL GVAC,1000
CAL? ON
Calibrate 1000 V AC Gain @1200 Hz
1000 V AC Gain
CAL:VAL GVACS,1000
CAL? ON
Calibrate 1000/750 V AC Pole @50000 Hz
set calibrator to output 329.0 V@50000Hz
1000/750 V AC Pole
CAL:VAL ACPOLE,329
CAL? ON
end comment
CAL:REC
Calibrate 1000 V DC
set calibrator to output 1000 Vdc
1000V DC

CAL:VAL GVDC,1000
CAL? ON
set calibrator to output -1000 Vdc
-1000V DC
CAL:VAL GVDC,-1000
CAL? ON
Calibrate 100 V DC
set calibrator to output 100 Vdc
100V DC
CAL:VAL GVDC,100
CAL? ON
set calibrator to output -100 Vdc
-100V DC
CAL:VAL GVDC,-100
CAL? ON
Calibrate 10 V DC
set calibrator to output 10 Vdc
10V DC
CAL:VAL GVDC,10
CAL? ON
set calibrator to output -10 Vdc
-10V DC
CAL:VAL GVDC,-10
CAL? ON
Calibrate 1 V DC
set calibrator to output 1 Vdc
1V DC
CAL:VAL GVDC,1

CAL? ON
set calibrator to output -1 Vdc
-1V DC
CAL:VAL GVDC,-1
CAL? ON
Calibrate 0.1 V DC
set calibrator to output 100 mVdc
0.1V DC
CAL:VAL GVDC,0.1
CAL? ON
set calibrator to output -100 mVdc
-0.1V DC
CAL:VAL GVDC,-0.1
CAL? ON
CAL:REC
Calibrate 1 A DC
set calibrator to output 1 Adc
1 A DC

CAL:VAL GIDC,1
CAL? ON
set calibrator to output -1 Adc
-1 A DC
CAL:VAL GIDC,-1
CAL? ON
Calibrate 10 A DC
set calibrator to output 10 Adc
10 A DC
CAL:VAL GIDC,10
CAL? ON
set calibrator to output -10 Adc
-10 A DC
CAL:VAL GIDC,-10
CAL? ON
CAL:REC
Calibrate 10 A ac @1200 Hz
set calibrator to output 10A ac@1200Hz
10 A AC
CAL:VAL GIAC,10
CAL? ON
10 A AC Gain
CAL:VAL GIACS,10
CAL? ON
Calibrate 1 A ac @1200 Hz
set calibrator to output 1A ac@1200Hz
1 A AC
CAL:VAL GIAC,1
CAL? ON
1 A AC Gain
CAL:VAL GIACS,1
CAL? ON
Calibrate 0.4 A AC @1200 Hz - OutGuard version 2.0 and above
set calibrator to output 329mA ac@1200Hz
0.4 A AC
CAL:VAL GIAC,329.0E-3
CAL? ON

0.4 A AC Gain
CAL:VAL GIACS,329.0E-3
CAL? ON
Calibrate 100mA AC @1200 Hz
set calibrator to output 100mA ac@1200Hz
100mA AC
CAL:VAL GIAC,100.0E-3
CAL? ON
100mA AC Gain

```
CAL:VAL GIACS,100.0E-3
CAL? ON
### Calibrate 10mA AC @1200 Hz
## set calibrator to output 10mA ac@1200Hz
# 10mA AC
CAL:VAL GIAC,10.0E-3
CAL? ON
# 10mA AC Gain
CAL:VAL GIACS,10.0E-3
CAL? ON
#
# 8846A - uncomment if adjusting 8846A
#
# Calibrate 0.001 A AC @1200 Hz 8846 only
## set calibrator to output 0.001A ac@1200Hz
# 0.001 A AC
CAL:VAL GIAC,1.0E-3
CAL? ON
# 0.001 A AC
CAL:VAL GIACS,1.0E-3
CAL? ON
# Calibrate 0.0001 A AC @1200 Hz 8846 only
## set calibrator to output 0.0001 ac@1200Hz
# 0.0001 A AC
CAL:VAL GIAC,100.0E-6
CAL? ON
# 0.0001 A AC
CAL:VAL GIACS,100.0E-6
CAL? ON
# end comment
CAL:REC
### Calibrate 0.0001 ADC
## set calibrator to output 0.0001A dc
# 0.0001 ADC
CAL:VAL GIDC,100.0E-6
CAL? ON
## set calibrator to output -0.0001A dc
# -0.0001 ADC
CAL:VAL GIDC,-100.0E-6
CAL? ON
### Calibrate 0.001 ADC
## set calibrator to output 0.001A dc
# 0.001 ADC
CAL:VAL GIDC,1.0E-3
CAL? ON
## set calibrator to output -0.001A dc
```

-0.001 ADC
CAL:VAL GIDC,-1.0E-3
CAL? ON
Calibrate 0.01 ADC
set calibrator to output 0.01A dc
0.01 ADC
CAL:VAL GIDC,10.0E-3
CAL? ON
set calibrator to output -0.01A dc
-0.01 ADC
CAL:VAL GIDC,-10.0E-3
CAL? ON
Calibrate 0.1 ADC
set calibrator to output 0.1A dc
0.1 ADC
CAL:VAL GIDC,100.0E-3
CAL? ON
set calibrator to output -0.1A dc
-0.1 ADC
CAL:VAL GIDC,-100.0E-3
CAL? ON
Calibrate 0.4 ADC
set calibrator to output 0.400A dc - OutGuard version 2.0 and above
0.4 ADC
CAL:VAL GIDC,400.0E-3
CAL? ON
set calibrator to output -0.400A dc - OutGuard version 2.0 and above
-0.4 ADC
CAL:VAL GIDC,-400.0E-3
CAL? ON
CAL:REC
Calibrate 100 MOhm
set calibrator to output 100M Ohms
100 MOhm
CAL:VAL GRES,100000000
CAL? ON
Calibrate 10 MOhm 4-wire
set calibrator to output 10M Ohms
10 MOhm
CAL:VAL GRES,10000000
CAL? ON
Calibrate 1 MOhm 4-wire
set calibrator to output 1M Ohms
1 MOhm
CAL:VAL GRES,1000000
CAL? ON
Calibrate 100 kOhm 4-wire
set calibrator to output 100k Ohms
100 kOhm

CAL:VAL GRES,100000
CAL? ON
Calibrate 10 kOhm 4-wire
set calibrator to output 10k Ohms
10 kOhm
CAL:VAL GRES,10000
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CAL? ON
Calibrate 1 kOhm 4-wire
set calibrator to output 1k Ohms
1 kOhm
CAL:VAL GRES,1000
CAL? ON
Calibrate 100 Ohm 4-wire
set calibrator to output 100 Ohms
100 Ohm
CAL:VAL GRES,100
CAL? ON
Calibrate 10 Ohm 4-wire
set calibrator to output 10 Ohms
10 Ohm
CAL:VAL GRES,10
CAL? ON
CAL:REC
#
8846A - uncomment if adjusting 8846A
#
Calibrate 1G Ohm 8846 only
Attach 1G Ohms to hi/lo terminals
1G Ohm - unremark
CAL:VAL GRES,1000000000
CAL? ON
Calibrate 10 nF 8846 only
apply 10nF standard
10 nF
CAL:VAL GCAP1,10.0E-9
CAL? ON
Calibrate 10 nF 8846 only
apply 10nF standard
10 nF gain
CAL:VAL GCAP2,10.0E-9
CAL? ON
end comment
CAL:REC
Turn on the calibration protection
CAL:SEC:STAT ON, FLUKE884X
power unit down to make new constants operational