TB 9-6625-2375-24

DEPARTMENT OF THE ARMY TECHNICAL BULLETIN

CALIBRATION PROCEDURE FOR DIGITAL MULTIMETER FLUKE MODELS 83V, 87V AND 88V

Headquarters, Department of the Army, Washington, DC
19 November 2008

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REPORTING OF ERRORS AND RECOMMENDING IMPROVEMENTS

You can improve this manual. If you find any mistakes or if you know of a way to improve these procedures, please let us know. Mail your letter or DA Form 2028 (Recommended Changes to Publications and Blank Forms) directly to: Commander, U.S. Army Aviation and Missile Command, ATTN: AMSAM-MMC-MA-NP, Redstone Arsenal, AL 35898-5000. A reply will be furnished to you. You may also send in your comments electronically to our E-mail address: 2028@redstone.army.mil or by fax 256-842-6546/DSN 788-6546. For the World Wide Web use: https://amcom2028.redstone.army.mil. Instructions for sending an electronic 2028 can be found at the back of this manual.

SECTION I
IDENTIFICATION AND DESCRIPTION

1. Test Instrument Identification. This bulletin provides instructions for the calibration of Digital Multimeter, Fluke Models 83V, 87V and 88V. The manufacturers' manuals were used as the prime data sources in compiling these instructions. The equipment being calibrated will be referred to as the TI (test instrument) throughout this bulletin.

a. Model Variations. Variations among models are described in text.

b. Time and Technique. The time required for this calibration is approximately 1 hour, using the dc and low frequency technique.

2. Forms, Records, and Reports

a. Forms, records, and reports required for calibration personnel at all levels are prescribed by TB 750-25.

b. Adjustments to be reported are designated (R) at the end of the sentence in which they appear. When adjustments are in tables, the (R) follows the designated adjustment. Report only those adjustments made and designated with (R).

3. Calibration Description. TI parameters and performance specifications which pertain to this calibration are listed in table 1.

Table 1. Calibration Description

Ac voltage: Model 83 & 88	Range: 0 to 1000 V in 5 ranges Accuracy: ± (% of input + counts)

	Frequency		
	50 – 60 Hz	30 Hz – 1 kHz	1 – 5 kHz
600 mV	(0.5 + 4)	(1.0 + 4)	(2.0 + 4)
6.000 V to 600V	(0.5 + 2)	(1.0 + 4)	(2.0 + 4) [1]
1000 V	(0.5 + 2)	(1.0 + 4)[1]	---

Range: 0 to 1000 V in 5 ranges
Accuracy: ± (% of input + counts)

Model 87

	Frequency			
	45-65 Hz	30 Hz-1kHz	1-5 kHz	5-20 kHz [2]
600 mV	(0.7 + 4)	(1.0 + 4)	(2.0 + 4)	(2.0 + 20)
6.000 V to 60.00V	(0.7 + 2)	(1.0 + 4)	(2.0 + 4)	(2.0 + 20)
600.0 V	(0.7 + 2)	(1.0 + 4)	(2.0 + 4)	---
1000 V	(0.7 + 2)	(1.0 + 4)[3]	---	---

See footnotes at end of table.

Table 1. Calibration Description Continued

Model 87 Low Pass Filter	45 to 440 Hz (±1.0 + 2), 200 Hz to 440 Hz. -6% - 4 [3]	
Frequency sensitivity All models	Range: 600 mV 99.95 Hz to 199.50 kHz, 150 mV Range 6 V 99.95 kHz .7V, Range 60 V 99.95 kHz, 7V ≤ 140 kHz	
Frequency Model 83 & 88 Model 87	 Range 99.95 Hz to 199.50 kHz Accuracy: ±0.005% + 1 Range 99.95 Hz to 199.50 kHz Accuracy: ±0.005% + 1	
Ac current: Model 83 & 88	Range: 0 to 10.00 A in 6 ranges. [4] Accuracy: ±1.2% of input + 2 counts	
Model 87	Range: 0 to 10.00 A in 6 ranges Accuracy: ±1.0% of input + 2 counts	
Dc current: Model 83 & 88	Ranges: 600.0 µA, 60.00 mA, 6.000 A Accuracy: ±0.4 % of input + 4 counts	
Model 87	Ranges: 6000 µA, 400.00 mA, 10.00A Accuracy: ±0.4 % of input + 2 counts	
Dc voltage Model 83 & 88	Range: 0 to 1000 V in 5 ranges Accuracy: ± (% of input + counts) 600 mV	(0.3 + 1)
	6.000 V to 1000V	(0.1 + 1)
Model 87	600 mV	(0.1 + 1)
	6.000 V to 1000 V	(0.05 + 1)
Resistance Model 83 & 88	Range: 0 to 50 MΩ in 6 ranges Accuracy: 600 Ω range; ±0.2% of input + 2 counts 6 kΩ and 60 kΩ ranges; ±0.2% of input +1 count 600 kΩ and 6 MΩ ranges; ±0.6% of input +1 count 50 MΩ range; ±1% of input + 3 counts	
Resistance Model 87	Range: 0 to 50 MΩ in 6 ranges Accuracy: 600 Ω range; ±0.4% of input + 2 counts.[5] 6 kΩ and 60 kΩ ranges; ±0.4% of input +1 count. 600 kΩ and 6 MΩ ranges; ±0.7% of input +1 count. 50 MΩ range; ±1% of input + 3 counts.	
Conductance: All models	Range: 60.00 nS [5] Accuracy: ±1% of input +10 counts	
Capacitance: All Models	Range: 10 nF to 9999 µF Accuracy: Relative mode used on nF ranges. ±1% 0f input + 2 counts	
Peak MIN/MAX	Min ±5.1 % 0f input MAX ±1.73 % 0f input.	
Duty cycle	± 0.67% of input waveform duty cycle.	
Trigger Level	± 0.02% of input	
Diode	± 2 % + 1 count of dc input	

[1]Frequency range 1 kHz to 2.5 kHz.
[2]Frequency range 1 kHz to 2.5 kHz at 600V.
[3]Specifications increases from -1% at 200 Hz to -6% at 440 Hz when filter is in use.
[4]Below a reading of 200 counts, add 10 counts.
[5]When using the REL function to compensate for offset.

SECTION II
EQUIPMENT REQUIREMENTS

4. Equipment Required. Table 2 identifies the specific equipment to be used in this calibration procedure. This equipment is issued with Secondary Transfer Calibration Standards Set AN/GSM-286, AN/GSM-287 and AN/GSM-705. Alternate items may be used by the calibrating activity. The items selected must be verified to perform satisfactorily prior to use and must bear evidence of current calibration. The equipment must meet or exceed the minimum use specifications listed in table 2. The accuracies listed in table 2 provide a four-to-one ratio between the standard and TI. Where the four-to-one ratio cannot be met, the actual accuracy of the equipment selected is shown in parenthesis.

5. Accessories Required. The accessories required for this calibration are common usage accessories issued as indicated in **4** above, and are not listed in this calibration procedure.

Table 2. Minimum Specifications of Equipment Required

Common name	Minimum use specifications	Manufacturer and model (part number)
CALIBRATOR	Dc voltage: Range: 0 to 1000 V Accuracy: ±0.0125% Ac voltage. Range: 0 to 1000V Frequency: 45 Hz to 20 kHz Accuracy: ±.125% Dc current: Range: 600 μA to 10 A Accuracy: ±.0.05% Ac current Range: 600 μA to 10 A Accuracy: ±0.05%	Fluke, Model 5720A (5720A) (p/o MIS-35947); w amplifier, Fluke 5725A/AR (5725A/AR)
CAPACITANCE STANDARD	Range: 9 nF to 0.9 μF Accuracy: ±.0.25%	Arco Electronic, Model SS-32 (7907233)
FUNCTION GENERATOR	Range: 20 Hz to 10 MHz 1 V rms Frequency Accuracy: ±0.00125% 3.4 to 8V pp DC Offset 2 to 2.5V	Agilent, Model 33250A (33250A)
RESISTANCE STANDARD NO. 1	330 Ω to 330 kΩ Accuracy ± 0.05%	Biddle-Gray, Model 71-631 (7910328)
RESISTANCE STANDARD NO. 2	3.3 MΩ Accuracy. ± 0.15%	Beckman, Model CR10M (8598965)
RESISTANCE STANDARD NO. 3	30 MΩ to 100 MΩ ±0.25%	Beckman, Model CR100M (8598966)

SECTION III
CALIBRATION PROCESS

6. Preliminary Instructions

a. The instructions outlined in paragraphs **6** and **7** are preparatory to the calibration process. Personnel should become familiar with the entire bulletin before beginning the calibration.

b. Items of equipment used in this procedure are referenced within the text by common name as listed in table 2.

c. Unless otherwise specified, verify the result of each test and, whenever the test requirement is not met, take corrective action before continuing with the calibration. Adjustments required to calibrate the TI are included in this procedure. Additional maintenance information is contained in the manufacturers' manuals for this TI.

d. Unless otherwise specified, all control and control settings refer to the TI.

7. Equipment Setup

a. Remove protective cover as needed to reset calibration password. Replace cover after completing the reset procedure.

b. Set function switch to **V**⏦.

8. AC Voltage Frequency Sensitivity

a. Performance Check

(1) Connect calibrator to TI **V Ω** ⏚ and **COM** inputs.

(2) Set TI **RANGE** pushbutton to 600 mv.

(3) Set calibrator for an output of 330 mV at a frequency of 60 Hz. If TI does not indicate within limits specified in first row of table 3, perform paragraph **18** below.

(4) Repeat technique of (2) and (3) above for settings and indications listed in table 3.

Table 3. AC Voltage Accuracy

Calibrator	Test instrument				
Output	**RANGE**	Limits			
		Model 83 and 88		Model 87	
		Min	Max	Min	Max
330 mV, 60 Hz	600 mV	327.9	332.1	327.3	332.7
600 mV, 13 kHz	600 mV	--	--	586.0	614.0
3.3 V, 60 Hz	6 V	3.281	3.319	3.275	3.325
3.3 V, 20 kHz	6 V	--	--	3.214	3.386
33 V, 60 Hz	60 V	32.81	33.19	32.75	33.25

Table 3. AC Voltage Accuracy - Continued

Calibrator	Test instrument				
Output	**RANGE**	Limits			
		Model 83 and 88		Model 87	
		Min	Max	Min	Max
33 V, 20 kHz	60 V	--	--	32.14	33.86
330 V, 60 Hz	600 V	328.1	331.9	327.5	332.5
330 V, 2.5 kHz	600 V	--	--	323.0	337.0
500 V, 60 Hz	1000 V	495	505	494	506
1000 V, 1 kHz	1000 V	986	1014	986	1014

(5) Set calibrator output to minimum.

(6) Set the TI **RANGE** pushbutton to 600mV and press TI **Hz %** button.

(7) Set calibrator for an output of 150 mV at a frequency of 99.95 kHz. TI will indicate within limits specified in first row of table 4.

(8) Repeat technique of (7) above for settings and indications listed in table 4.

Table 4. AC Volts Frequency Sensitivity

Calibrator	Test instrument		
Output	**RANGE**	Limits	
		All models	
		Min	Max
150 mV, 99.95 kHz	600 mV	99.93	99.97
150 mV, 199.50 kHz	600 mV	199.48	199.52
0.7 V, 99.95 kHz	6 V	99.93	99.97
7 V, 99.95 kHz	60 V	99.93	99.97

(9) Set calibrator output to minimum.

b. Adjustments. Perform paragraph **18** below.

9. Dc Voltage

a. Performance Check

(1) Connect calibrator to TI **V Ω** ⊣⊢ and **COM** inputs.

(2) Set rotary switch to m**V** ⎓ and range to 600mV.

(3) Set calibrator output for 33mV. TI will indicate within limits specified in table 5 for appropriate model.

(4) Repeat technique of (3) above, using settings and indications listed in table 5.

Table 5. Dc Voltage Accuracy

Calibrator	Test instrument				
Output	**RANGE**	Limits			
		Model 83 and 88		Model 87	
		Min	Max	Min	Max
33 mV	600 mV	32.8	33.2	32.9	33.1
330 mV	600 mV	328.9	331.1	329.6	330.4

(5) Set calibrator output to minimum.

(6) Set rotary switch to V⎓.

(7) Repeat technique of (3) above, using voltage settings and indications listed in table 6. TI will indicate within limits specified for appropriate model in table 6.

Table 6. Dc Voltage Accuracy

Calibrator	Test instrument					
Output	**RANGE**	Limits				
		Model 83 and 88		Model 87		
		Min	Max	Min	Max	
3.3 V	6.0 V	3.296	3.304	3.297	3.303	
33 V	60 V	32.96	33.04	32.97	33.03	
330 V	600 V	329.6	330.4	329.7	330.3	
1000 V	1000 V	998	1002	998	1002	

(8) Set calibrator output to minimum.

b. Adjustments. Perform paragraph **18** below.

10. Diode

a. Performance Check

(1) Set the TI rotary switch to ⏚ and range to 6V.

(2) Set calibrator output to 3V DC.

(3) The TI display will indicate between 2.939 and 3.061 for all models.

(4) Set calibrator output to minimum and disconnect equipment setup.

b. Adjustments. Perform paragraph **18** below.

11. AC Current

a. Performance Check

(1) Connect TI **mA/ µA** input and **COM** to calibrator.

(2) Set TI rotary switch to µA⎓̃ and range to 600 µA.

(3) Set calibrator output for 330 µA at a frequency of 60 Hz. TI will indicate within limits specified in first row of table.

(4) Repeat technique of (3) above, using ranges, calibrator outputs and indications listed in table 7. TI will indicate within limits specified in table 7.

Table 7. AC Current Accuracy

Calibrator	Test instrument				
Output (60 Hz)	RANGE	Limits			
		Model 83 and 88		Model 87	
		Min	Max	Min	Max
330 µA	600 µA	325.8	334.2	326.5	333.5
3330 µA	6000 µA	3258	3342	3265	3335
33 mA	60 mA	32.58	33.42	32.65	33.35
330 mA	400 mA	325.8	334.2	326.5	333.5

(5) Set calibrator output to minimum.

(6) Move connection from TI **mA/µA** input to TI **A** input and from calibrator outputs to amplifier outputs.

(7) Set TI **RANGE** pushbutton to 6 A (Amps) and calibrator output to 3.0A at 60 Hz.

(8) TI will indicate between 2.962 and 3.038 A for models (83 and 88), and 2.968 and 3.032 A for model 87.

(9) Set TI **RANGE** pushbutton to 10 A and calibrator output to 9.0A at 60 Hz.

(10) TI will indicate between 8.87 A and 9.13 A for models (83 and 88), and 8.89 and 9.11A for model 87.

b. Adjustments. Perform paragraph **18** below.

12. DC Current

a. Performance Check

(1) Connect TI **µA** input and **COM** to calibrator.

(2) Set TI rotary switch to µA⎓ and range to 600 µA press the **yellow button** for DC current.

(3) Set calibrator output for 330.0 µA (micro Amps). TI will indicate within limits specified for appropriate model in first row of table 8.

(4) Repeat technique of (3) above, using settings and indications listed in table 8. TI will indicate within limits specified for appropriate model in table 8.

Table 8. DC Current Accuracy (µA)

Calibrator	Test instrument				
Output	RANGE	Limits			
		Model 83 and 88		Model 87	
		Min	Max	Min	Max
330 µA	600 µA	328.3	331.7	328.9	331.1
3330 µA	6000 µA	3285	3315	3291	3309

(5) Set rotary switch to **mA/A** ⎓.

(6) Set calibrator output to minimum.

(7) Move connection from TI **µA** input to **mA/A input**.

(8) Set calibrator output for 33.0 mA (milliamps). TI will indicate within limits specified for appropriate model in first row of table 9.

(9) Repeat technique of (8) above, using settings and indications listed in table 9. TI will indicate within limits specified for appropriate model in table 9.

Table 9. DC Current Accuracy (mA)

Calibrator	Test instrument				
Output mA(milliamps)	**RANGE** mA(milliamps)	Limits			
		Model 83 and 88		Model 87	
		Min	Max	Min	Max
33	60	32.83	33.17	32.89	33.11
330	400	328.5	331.5	329.1	330.9

(10) Set calibrator output to minimum.

(11) Move connection from calibrator outputs to amplifier outputs.

(12) Set TI **RANGE** pushbutton to 6 A.

(13) Set calibrator output for 3 A. TI will indicate within limits specified for appropriate model in first row of table 10.

(14) Repeat technique of (8) above, using settings and indications listed in table 10. TI will indicate within limits specified for appropriate model in table 10.

Table 10. Dc Current Accuracy (A)

Calibrator	Test instrument				
Output	**RANGE**	Limits			
		Model 83 and 88		Model 87	
		Min	Max	Min	Max
3.0 A	6 A	2.984	3.016	2.990	3.010
9 A	10 A	8.94	9.06	8.96	9.04

(15) Set calibrator output to minimum and disconnect equipment setup.

b. Adjustments. Perform paragraph **18** below.

13. Low Pass Filter

a. Performance Check (87 only)

(1) Connect calibrator output to TI **V Ω** ⏚ and **COM** inputs.

(2) Set TI function switch to **V**~ and range to 1000 V.

(3) Set the calibrator for an output of 400 Vac, 400 Hz output.

(4 Press the **LO PASS FILTER** pushbutton.

(5) TI display will indicate between 376 and 408.

(6) Adjust the calibrator output frequency to 800 Hz.

(7) TI display will indicate between 226 and 340.

(8) Set calibrator output to minimum and disconnect equipment setup.

b. Adjustments. No adjustment can be made.

14. Capacitance

a. Performance Check

(1) Set TI rotary switch to))) Ω ⊣⊢ and press yellow pushbutton to select capacitance.

(2) Connect meter leads to TI **V Ω** ⊣◀ and **COM** inputs.

(3) Connect open ends of leads to 9 nf capacitance standard. TI will indicate within limits specified in first line of table 11 for appropriate model.

(4) Repeat technique of (3) above, using the remaining nominal values capacitance standards and TI indications listed in table 11. TI will indicate within limits specified for appropriate model in table 11.

(5) Disconnect capacitance standard.

Table 11 Capacitance Accuracy

Capacitance standard	Test instrument		
Nominal value	**RANGE**	Limits	
		All models	
		Min	Max
9 nf [1]	10 nf	8.89 nf	9.11 nf
90 nf[1]	100 nf	89.9 nf	91.1 nf
0.9 µf	1 µf	0.889 µf	0.911 µf

[1]Use REL to compensate for internal meter and lead capacitance. Test leads must be disconnected from capacitor standard before using REL.

b. Adjustments.
No adjustment can be made.

15. Resistance/Conductance

a. Performance Check

(1) Connect resistance standard no. 1 to TI **V Ω** ⊣◀ and **COM** inputs.

(2) Set TI rotary switch to ohms))) Ω ⊣⊢ and press TI **RANGE** pushbutton for 600 Ω range**.**

(3) Touch the test leads together and press TI **REL Δ** pushbutton.

(4) Set resistance standard no. 1 for a 330 Ω output.

(5) TI will indicate within limits specified in first row of table 12.

(6) Set resistance standard no. 1 output and TI range for the remaining settings listed in table 12. TI will indicate within limits specified for appropriate model in table 12.

Table 12. Resistance Accuracy

Calibrator	Test instrument				
Output (Ohms)	**RANGE** (Ohms)	Limits			
		Model 83 and 88		Model 87	
		Min	Max	Min	Max
330	600	328.5	331.5	329.1	330.9
3.3 k	6 k	3.286	3.314	3.292	3.308
33 k[1]	60 k	32.86	33.14	32.92	33.08
330 k	600 k	327.6	332.4	327.9	332.1

[1]Do not use the relative function for this step and beyond.

(7) Connect resistance standard no. 1 and resistance standard no. 2 together and set for 3.3 MΩ.

(8) Set range to 6 MΩ. TI will indicate 3.276 to 3.324 for models 83 and 88, and 3.279 to 3.321 for model 87.

(9) Connect resistance standard no. 3 for 30 MΩ to the TI, and set the range to 50 MΩ.

(10) TI will indicate 29.67 to 30.33 for all models.

(11) Press TI **RANGE** pushbutton until the nS indicator appears on the display.

(12) Disconnect the lead from the meter, the TI will display from -0.30 and 0.30 for all models.

(13) Reconnect the leads across resistance standard no. 3 for 100 MΩ.

(14) TI will indicate between 9.60 and 10.40 nS for all models.

(15) Set calibrator output to minimum and disconnect equipment setup.

b. Adjustments. Perform paragraph **18** below.

16. Trigger Level/ DC Duty Cycle

a. Performance Check

(1) Connect function generator to TI **V Ω** and **COM** inputs.

(2) Set rotary switch to V⎓ , 6 V range and press TI **Hz %** button.

(3) Set function generator for an output of 3.4 V, 1 kHz square wave.

(4) TI will read 999.8 Hz to 1000.2 Hz for all models.

(5) Press the TI **Hz %** button again for duty cycle mode.

(6) Set function generator for an output of 5V, 1 kHz, DC offset 2.5 V square wave.

(7) The TI display will read 49.7% to 50.3% for all models.

(8) Set function generator output to minimum and disconnect equipment setup.

b. Adjustments. No adjustment can be made.

17. Peak Min/Max

a. Performance Check

(1) Connect function generator output to TI **V Ω** and **COM** inputs.

(2) Set TI rotary switch to **V** ⎓ and range to 6 V.

(3) Set function generator for an output of 8 Vpp, 2 kHz square wave, DC offset 2 V.

(4) Press the **MIN/MAX** pushbutton to put the meter in MIN/Max recording mode.

(5) Press the **MIN/MAX** button again to get the MAX reading. The display should read between 5.896 and 6.104 for all models.

(6) Press the **MIN/MAX** button again to get the MIN reading. The display should read between -1.898 and -2.102 for all models.

(7) Hold the **MIN/MAX** pushbutton down for 1 second to get the meter out of the MIN/Max Recording Mode.

b. Adjustments. No adjustment can be made.

18. Software Adjustments

NOTE

If the meter is turned off before completion of adjustment procedure, the calibration constants are not changed.

After pressing **Autohold**, wait until the step number advances before changing the calibrator source or turning the meter rotary switch.

If the meter rotary knob is not in the correct position, or if the measured value is not within the anticipated range of the input value, the meter emits a double beep and will not continue to the next step.

The meter buttons represent the digit indicated below when entering or changing the password. Yellow button=1, Min/Max=2, Range=3, Autohold=4, Backlight=5, Continuity= 6, Rel=7, and Hz=8.

a. While holding down **MIN MAX** , turn the rotary knob from **OFF** to **VAC**. The meter will display "**CAL**".

b. Press **Autohold** once to see the calibration counter.

c. Press again to start the password entry. The meter displays "**????**".

d. Press 4 buttons to enter the pass word; the default password is 1,2,3,4.

e. If the password is known skip to step k.

f. If the calibration password is forgotten, the default password (1234) can be restored using the following steps.

g. While holding down **MIN/MAX**, turn the rotary switch from **OFF** to **VAC.** The meter displays "**CAL**".

h. Remove the meter's top case. Leave the PCA in the bottom case.

i. Through an access hole provided in the top shield, short across the keypads on the PCA (see figure 1). The meter should beep. The default password is now restored.

j. Replace the meters top case and turn the rotary switch to **OFF**.

k. Press **Autohold** to go to the first calibration step. The meter displays "**C-01**" if the password is correct. If the password is not correct, the meter emits a double beep; displays "**????**"; and the password must be entered again.

l. Using table 13, apply the input value listed for each calibration adjustment step. For each step, position the rotary switch and apply the input to the terminals indicated.

m. After each input value is applied, press **Autohold** to accept the value and proceed to the next step (C-02 and so forth).

n. After the final step, the display shows "End" to indicate that the calibration adjustment is complete. Press **Autohold** to go to meter mode.

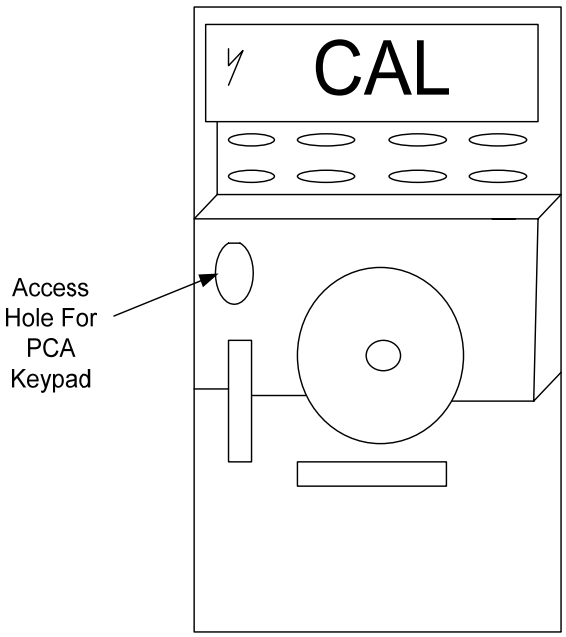

Figure 1. Restoring the default password.

Table 13. Calibration Adjustment Steps

TI			Calibrator output		
Switch position	Meter input	Step	Function	Model 83 and 88	Model 87
AC volts	V Ω ⏚	C01	AC Volts	600 mV, 60 Hz	600 mV, 60 Hz
		C02		600 mV, 5 kHz	600.0 mV, 20 kHz
		C03		6.000 V, 60 Hz	6.000 V, 60 Hz
		C04		6.000 V, 5 kHz	6.000 V, 20 kHz
		C05		60.00 V, 60 Hz	60.00 V, 60 Hz
		C06		60.00 V, 5 kHz	60.00 V, 20 kHz
		C07		600.0 V, 60 Hz	600.0 V, 60 Hz
		C08		600.0 V, 5k Hz	600.0 V, 20 kHz
DC volts		C09	DC Volts	6.000 V	6.000 V
		C10		60.00 V	60.00 V
		C11		600.0 V	600.0 V
DC millivolts		C12		600.0 mV	600.0 mV
		C13		60.00 mV	60.00 mV
Ohms	V Ω ⏚	C14	Ohms	600 Ω	600 Ω
		C15		6,000 k	6,000 k
		C16		60.00	60.00 k
		C17		600.0 k	600.0 k
		C18		6.000 M	6.000 M
		C19		0.000	0.000
		C20		50.0 M	50.0 M
Diode test		C21	DC Volts	3.000V	3.000V
Amps	A	C22	Amps (AC)	6.000 A, 60Hz	6.000 A, 60Hz
		C23	Amps (DC)	6.000 A DC	6.000 A DC
Milliamps	mA/µA	C24	Amps (AC)	60.00mA, 60 Hz	60.00mA, 60 Hz
		C25		400mA, 60Hz	400mA, 60Hz
		C26	Amps (DC)	50.00mA	50.00mA
Micro amps A		C27		400mA	400mA
		C28	Amps (AC)	600.0µA, 60Hz	600.0µA, 60Hz
		C29		6000µA, 60Hz	6000µA, 60Hz
		C30	Amps (DC)	600.0µA	600.0µA
		C31		6000µA	6000µA

19. Final Procedure

a. Deenergize and disconnect all equipment.

b. Annotate and affix DA label/form in accordance with TB 750-25.

By Order of the Secretary of the Army:

GEORGE W. CASEY, JR.
General, United States Army
Chief of Staff

Official:

JOYCE E. MORROW
Administrative Assistant to the
Secretary of the Army

0826204

Distribution:

To be distributed in accordance with the initial distribution number (IDN) 344930, requirements for calibration procedure TB 9-6625-2375-24.

Instructions for Submitting an Electronic 2028

The following format must be used if submitting an electronic 2028. The subject line must be exactly the same and all fields must be included; however, only the following fields are mandatory: 1, 3, 4, 5, 6, 7, 8, 9, 10, 13, 15, 16, 17, and 27.

From: "Whomever" whomever@redstone.army.mil
To: <2028@redstone.army.mil

Subject: DA Form 2028

1. **From**: Joe Smith
2. Unit: home
3. **Address**: 4300 Park
4. **City**: Hometown
5. **St**: MO
6. **Zip**: 77777
7. **Date Sent**: 19-OCT –93
8. **Pub no:** 55-2840-229-23
9. **Pub Title**: TM
10. **Publication Date**: 04-JUL-85
11. Change Number: 7
12. Submitter Rank: MSG
13. **Submitter FName**: Joe
14. Submitter MName: T
15. **Submitter LName**: Smith
16. **Submitter Phone**: 123-123-1234
17. **Problem**: 1
18. Page: 2
19. Paragraph: 3
20. Line: 4
21. NSN: 5
22. Reference: 6
23. Figure: 7
24. Table: 8
25. Item: 9
26. Total: 123
27. **Text**

This is the text for the problem below line 27.

PIN: 085094-000