

# **\*TB 9-6625-2353-35**

## **DEPARTMENT OF THE ARMY TECHNICAL BULLETIN**

### **CALIBRATION PROCEDURE FOR DIGITAL MULTIMETER, AN/PSM-45 AND (SIMPSON, MODEL 467) AND SIMPSON, MODEL 467E**

Headquarters, Department of the Army, Washington, DC

15 April 2004

*Distribution Statement A: Approved for public release; distribution is unlimited*

#### **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, US Army Aviation and Missile Command, AMSAM-MMC-MA-NP, Redstone Arsenal, AL 35898-5000. A reply will be furnished to you. You may also provide DA Form 2028 information to AMCOM via e-mail, fax, or the World Wide Web. Our fax number is DSN 788-6546 or Commercial 256-842-6546. Our e-mail address is [2028@redstone.army.mil](mailto:2028@redstone.army.mil). Instructions for sending an electronic 2028 may be found at the back of this manual. For the World Wide Web, use <https://amcom2028.redstone.army.mil>.

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\*This bulletin, together with TB 9-6625-2352-35, dated 15 April 2004 and TB 9-6625-2354-35, dated 15 April 2004, supersedes TB 9-6625-2147-35, dated 3 April 1985, including all changes, in its entirety.

## SECTION I IDENTIFICATION AND DESCRIPTION

**1. Test Instrument Identification.** This bulletin provides instructions for the calibration of Digital Multimeter, AN/PSM-45 and (Simpson, Model 467) and Simpson, Model 467E. The manufacturers' manuals or TMs 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, tables, and figures.

**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

| Test instrument parameters | Performance specifications                                                                                                                                                                                                                                                                                                                                                  |
|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Dc voltage                 | Range: 0 to $\pm 1000$ V in 5 ranges w/probe 5000 V<br>Accuracy: $\pm(0.1\%$ of input +1 count) probe $\pm 5\%$                                                                                                                                                                                                                                                             |
| Ac voltage                 | Range: 0 to 750 V in 5 ranges w/probe 0-5000 V<br>Accuracy: 200 mV, 2, 20, and 200 V ranges, 20 to 40 Hz, $\pm(1.5\%$ of input +5 counts); 40 Hz to 1 kHz, $\pm(0.5\%$ of input +5 counts); 1 to 5 kHz, $\pm(5\%$ of input +5 counts) 750 V range, 20 to 40 Hz, $\pm(1.5\%$ of input +5 counts); 40 to 400 Hz, $\pm(0.5\%$ of input +5 counts) probe $\pm 5\%$ <sup>1</sup> |
| Dc current                 | Range: 0 to $\pm 2000$ mA in 5 ranges. 10 A w/shunt<br>Accuracy: 200 $\mu$ A, 2 and 20 mA ranges, $\pm(0.5\%$ of input +1 count)<br>200 and 2000 mA ranges, 10 A w/shunt $\pm(0.75\%$ of input +1 count) $\pm.25\%$ for shunt                                                                                                                                               |
| Ac current <sup>2</sup>    | Range: 0 to $\pm 2000$ mA in 5 ranges. 10 A w/shunt<br>Accuracy: 200 $\mu$ A, 2 and 20 mA ranges, $\pm(0.5\%$ of input +1 count)<br>200 and 2000 mA ranges, 10 A w/shunt $\pm(0.75\%$ of input +1 count) $\pm.25\%$ for shunt                                                                                                                                               |
| Resistance                 | Range: 0 to 20 M $\Omega$ in 6 ranges<br>Accuracy: 200 $\Omega$ , 2, 20, 200, and 2000 k $\Omega$ , $\pm(0.25\%$ of input +1 count)<br>20 M $\Omega$ , $\pm(1\%$ of input +1 count)                                                                                                                                                                                         |

<sup>1</sup> Probe not calibrated on Ac.

<sup>2</sup> Ac current verified by dc current check because current measurements of ac and dc are made using same shunt resistor.