

***TB 9-6625-1965-35**

DEPARTMENT OF THE ARMY TECHNICAL BULLETIN

CALIBRATION PROCEDURE FOR DIGITAL MULTIMETER FLUKE, MODELS 8000A, 8000A-01, 8000A-05, 8000A/BU, 8000A/MAS, AND 8000A/MTR01

Headquarters, Department of the Army, Washington, DC

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SECTION I IDENTIFICATION AND DESCRIPTION

1. Test Instrument Identification. This bulletin provides instructions for the calibration of Digital Multimeter Fluke, Models 8000A, 8000A-01, 8000A-05, 8000A/BU, 8000A/MAS, and 8000A/MTR01. 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. Model 8000A is the basic digital multimeter; model 8000A-01 has a battery pack option, 8000A-05 has a 10A current range option, model 8000A/MAS has a milliampere-second option, and model 8000A/MTR01 has an analog panel meter with battery pack option.

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 in table 1.

Table 1. Calibration Description

Test instrument parameters	Performance specifications
Dc voltage	Range: 0 to ± 1200 V in 5 ranges Accuracy: $\pm(0.1\%$ of reading + 1 digit)
Ac voltage: Models 8000A, 8000A-01, 8000A-05, 8000A/BU and 8000A/MTR01	Range: 0 to 1200 V in 5 ranges Accuracy: 45 Hz to 10 kHz $\pm(0.5\%$ of reading + 2 digits) 10 to 20 kHz $\pm(1.0\%$ of reading + 2 digits)
Model 8000A/MAS	Range: 0 to 1200 V in 5 ranges Accuracy: 45 Hz to 5 kHz $\pm(.6\%$ of reading + 2 digits) 5 to 10 kHz $\pm(1.0\%$ of reading + 2 digits) 10 to 20 kHz $\pm(2.0\%$ of reading + 2 digits)

Table 1. Calibration Description Continued

Test instrument parameters	Performance specifications
Dc current: Model 8000A-05	Range: 0 to 2000 mA in 5 ranges Accuracy: $\pm (0.3 \% \text{ of reading} + 1 \text{ digit})$ Range: 10 A (1 minute operation from 10 to 20 A) Accuracy: $\pm(0.5 \% \text{ of reading} + 1 \text{ digit})$
Ac current: ¹ Model 8000A-05	Range: 0 to 2000 mA in 5 ranges Accuracy: 45 Hz to 10 kHz $\pm(1.0 \% \text{ of reading} + 2 \text{ digits})$ except the 2000 mA range 45 Hz to 3 kHz $\pm (1.0 \% \text{ of reading} + 2 \text{ digits on the 2000 mA range})$ Range: 10 A (1 minute operation from 10 to 20 A) Accuracy: 45 Hz to 3 kHz $\pm(1.0 \% \text{ of reading} + 2 \text{ digits})$
Resistance: (Models 8000A,8000A-01, 8000A-05, 8000A/BU and 8000A/MTR01) Model 8000A/MAS	Range: 0 to 20 M Ω in 6 ranges $\pm(0.2\% \text{ of reading} + 1 \text{ digit through } 2000 \text{ k}\Omega)$ $\pm(0.5\% \text{ of reading} + 1 \text{ digit on } 20 \text{ M}\Omega \text{ range})$ Range: 0 to 2000 k Ω in 6 ranges Accuracy: $\pm(0.25 \% \text{ of reading} + 1 \text{ digit})$
Milliampere-second Model 8000A/MAS only	Range: 0 to 2000 mA in 5 ranges Accuracy: $\pm(1.0 \% \text{ of reading} + 1 \text{ digit})$

¹Ac current check is verified by dc current check.

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 paragraph 4 above, and are not listed in the calibration procedure.