

***TB 9-6625-2227-35**

DEPARTMENT OF THE ARMY TECHNICAL BULLETIN

CALIBRATION PROCEDURE FOR DIGITAL MULTIMETER HEWLETT-PACKARD MODELS 3435A AND 3438A

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REPORTING OF ERRORS AND RECOMMENDING IMPROVEMENTS

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*This bulletin supersedes TB 9-6625-2227-35, 23 May 1995.

SECTION I IDENTIFICATION AND DESCRIPTION

1. Test Instrument Identification. This bulletin provides instructions for the calibration of Digital Multimeter, Hewlett-Packard, Models 3435A and 3438A. The manufacturer's manual was used as the prime data source in compiling these instructions. The equipment being calibrated will be referred to as the TI (test instrument) throughout this bulletin.

a. Model Variations. None.

b. Time and Technique. The time required for this calibration is approximately 2 hours, 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 applications 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: 200 mV range: $\pm(0.1\%$ of reading + 2 digits) 2 V to 1200 V range: $\pm(0.1\%$ of reading + 1 digit)
Ac voltage	Range: 0 to 1200 V in 5 ranges Accuracy: 0 to 50 Hz: $\pm(1.5\%$ of reading + 3 digits) 50 to 20 kHz: $\pm(0.3\%$ of reading + 3 digits) 20 to 100 kHz: $\pm(1.5\%$ of reading + 10 digits)
Dc current	Range: 0 μ A to 2000 mA in 5 ranges Accuracy: 200 μ A to 200 mA range: $\pm(0.3\%$ of reading + 2 digits) 200 mA range: $\pm(0.6\%$ of reading + 2 digits)
Ac current ¹	Range: 0 μ A to 2000 mA in 5 ranges Accuracy: 200 μ A to 200 mA: 30 to 50 Hz: $\pm(1.7\%$ of reading + 4 digits) 50 Hz to 10 kHz: $\pm(0.9\%$ of reading + 4 digits) 200 mA: 30 to 50 Hz: $\pm(2\%$ of reading + 4 digits) 50 to 10 kHz: $\pm(1.2\%$ of reading + 4 digits)
Resistance	Range: 0 Ω to 20 M Ω in 7 ranges Accuracy: 20 Ω range: $\pm(0.5\%$ of reading + 10 digits) 200 Ω to 2 M Ω range: $\pm(0.2\%$ of reading + 2 digits) 20 M Ω range: $\pm(0.8\%$ of reading + 2 digits)

¹Actual parameters not tested; checked in dc current mode.