
DEPARTMENT OF THE ARMY TECHNICAL BULLETIN

**CALIBRATION PROCEDURE FOR
AMMETER SIMPSON 2100**

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SECTION I INTRODUCTION AND DESCRIPTION

1-1. Purpose and Scope. This bulletin provides information for the periodic certification of Ammeter, Simpson, model 2100. It is to be used by personnel trained and qualified in the use of calibration equipment. Since calibration personnel are trained and qualified in the usage of test and measuring equipment, detailed instructions for operation and use of these equipments are not contained in this bulletin.

1-2. Reporting of Technical Bulletin Improvements. The reporting of errors, omissions, and recommendations for improving of this bulletin is authorized and encouraged. Submit reports on DA Form 2028 (Recommended Changes to Publications and Blank Forms) directly to: Commander, US Army Electronics Command, ATTN: AMSEL-MA-Q, Fort Monmouth, NJ 07703.

1-3. Descriptive Data. *a. Identification.*
Nomenclature.....Ammeter (Multi range)
Manufacturer.....Simpson Electric Co.
Model number2100
Size5 in. x 5 in. x 6 in.
(approx.)

b. Specifications.

Ranges0 to 1.5 amperes
 0 to 3 amperes
 0 to 30 amperes
Accuracy.....2% of full scale value.

c. Calibration.

Interval.....In accordance with
 TB 43-180
Time required.....1 hour
Technique.....DC Low Frequency

1-4. General Instructions. *a. Calibration Reporting.* During the performance of this procedure annotate DA Form 2416 (Calibration Data Card) in accordance with TM 38-750.

b. Test Instrument. Throughout this procedure the Test Instrument will be identified as TI (Test Instrument).

**SECTION II
EQUIPMENT REQUIRED**

NOTE

Minimum use specifications are the principal parameters required for performance of the calibration, and are included to assist in the selection of alternate equipment, which may be used at the discretion of the calibrating activity. Satisfactory performance of alternate items shall be verified prior to use. All applicable equipment must bear evidence of current calibration.

1-5. Calibration Equipment Required. Test equipment required for calibration are listed in Table 1.

1-6. Accessories Required. The accessories required for calibration are listed in Table 2.

Table 1. Equipment Required

Item	Common Name	Minimum use specification	Calibration* equipment
A1	Differential Volt Meter	RANGE: 0 to 32 millivolts ACCURACY: $\pm 0.5\%$	J Fluke Model 887AB
A2	Current Shunt	RANGE: 10 to 30 amperes ACCURACY: $\pm 0.75\%$	Guideline Model 9711
A3	Current Supply	RANGE: 0 to 30 amperes	Sorrinsen Model ORE300-M3 4931-178-0715
A4	Decade Resistor	RANGE: 0 TO 100K ohms .015 to 5 amperes ACCURACY: $\pm 1\%$	Winslow Electronics Model 336 7907234

*The calibration equipment utilized in this procedure was selected from those known to be available at Department of Defense facilities, and the listing by make or model number carries no implication of preference, recommendation, or approval by the Department of Defense for use by other agencies. It is recognized that equivalent equipment produced by other manufacturers may be capable of equally satisfactory performance in the procedure.

Table 2. Accessories Required

Item	Common name	Description
B1	Test lead	Banana plug to banana plug, 24 inches, black
B2	Test lead	Banana plug to banana plug, 24 inches, red
B3	Adaptor ¹	Banana jack to spade lug
B4	Test lead ¹	Spade lug terminations, 18 inches, black
B5	Test lead ¹	Spade lug terminations, 18 inches, red

¹2 req

SECTION III
PRELIMINARY PROCEDURE

1-7. **Preliminary Instructions.** a. Hold TI so that the meter is in a horizontal position and move slightly to the right and left and observe that the pointer swings freely.

b. Check TI for mechanical zero and adjust if necessary.

1-8. **Equipment Setup.** Connect equipment as shown in figure 1.

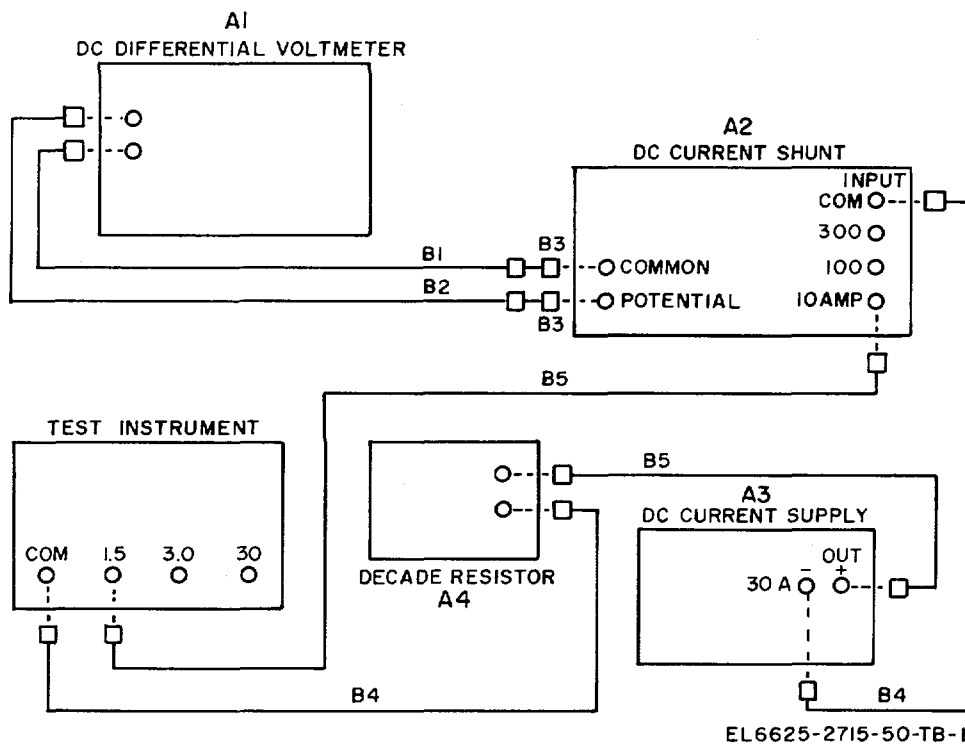


Figure 1. Ammeter Current Calibration, EL 6625-2715-50-TB-1 equipment setup.

SECTION IV CALIBRATION

1-9. Current Calibration. a. Performance Check.

(1) Adjust Current Supply A3 and Decade Resistor A4 for a TI full scale indication.

(2) Observe that the DC Differential Voltmeter indicates between 14.7 and 15.3 millivolts.

(3) Remove positive lead from 1.5 ampere connector and connect to TI 3.0 ampere connector.

(4) Adjust current supply and decade resistor for a TI full scale indication.

(5) Observe that the differential voltmeter indicates between 24 and 30.6 millivolts.

(6) Remove positive lead from 3.0 ampere connector and connect to TI 30 ampere connector.

(7) Remove decade resistor from equipment

setup and adjust current shunt for 30 amp reading.

(8) Adjust current supply for a TI full scale indication.

(9) Observe that the differential voltmeter indicates between 294 and 30.6 millivolts.

b. *Adjustment.* No adjustments can be made.

1-10. Final Procedure. a. Deenergize and disconnect all equipment.

b. In accordance with TM 38-750, annotate and affix DA Label 80 (US Army Calibration System). When the TI cannot be adjusted within tolerance, annotate and affix Form 2417 (Unserviceable or Limited Use) (Red Tag).

By Order of the Secretary of the Army:

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