

TECHNICAL MANUAL

OPERATOR'S, ORGANIZATIONAL, DIRECT SUPPORT, AND

GENERAL SUPPORT MAINTENANCE MANUAL

ELECTRONIC VOLTMETERS ME-202A/U

(NSN 6625-00-709-0288)

AND

ME-202B/U (NSN 6625-00-972-4046)

HEADQUARTERS, DEPARTMENT OF THE ARMY

JULY 1975

TECHNICAL MANUAL }
No. 11-6625-537-14-1 }

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, DC, 3 July 1975

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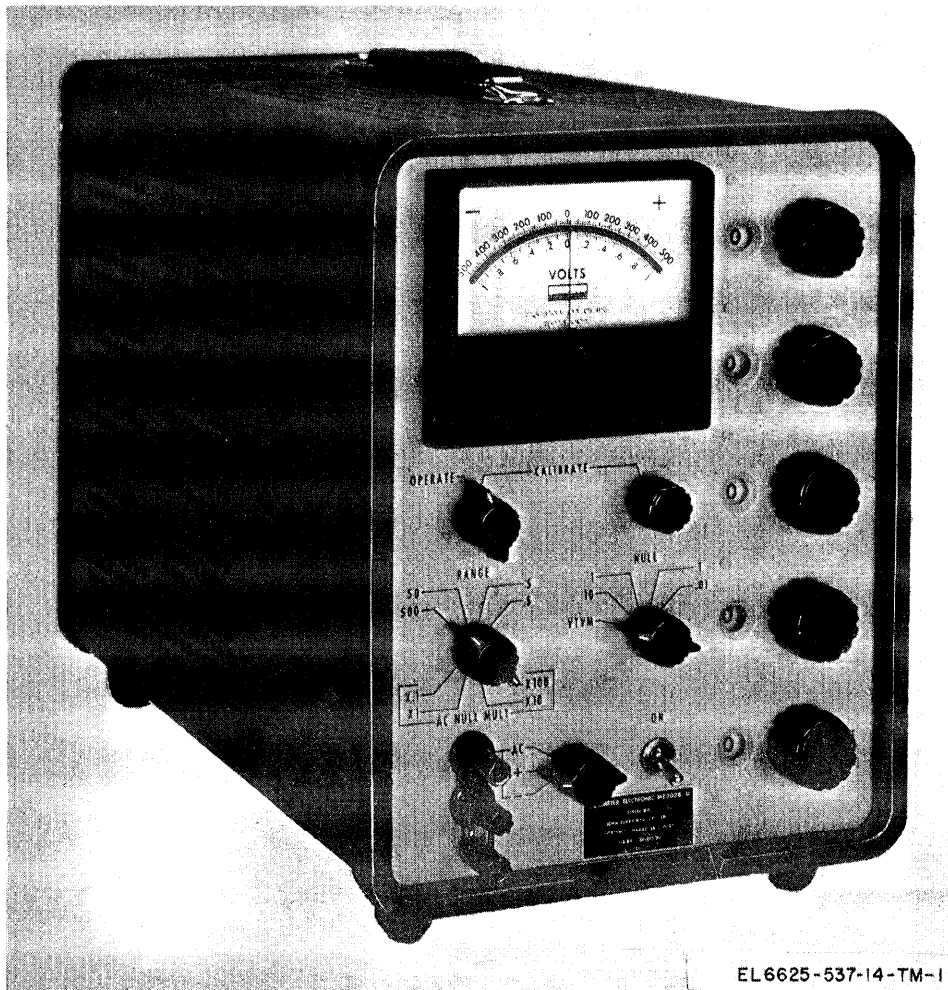
*This manual supersedes TM 11-6625-537-15-1, 12 August 1966.

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Figure 1-1. Electronic Voltmeter ME-202(*)/U.

CHAPTER 1

INTRODUCTION

Section I. GENERAL

1-1. Scope

a. This manual describes Electronic Voltmeters ME-202A/U and ME-202B/U, Electronic Voltmeter (*fig. 1-1*) and covers instructions for operation, installation, and operator's, organisational, and general support maintenance. No direct support maintenance is authorized.

b. Official nomenclature followed by (*) is used to indicate all models of equipment. Thus, Electronic Voltmeter ME-202(*)/U indicates Electronic Voltmeters ME-202A/U and ME-202B/U.

c. A list of references is contained in appendix A.

d. The maintenance allocation chart (MAC) appears in appendix C.

1-2. Indexes of Publications

a. *DA Pam 910-4*. Refer to the latest issue of *DA Pam 310.4* to determine whether there are new editions, changes, or additional publications pertaining to the equipment.

b. *DA Pam 310-7*. Refer to *DA Pam 310-7* to determine whether there are modification work orders (MWO'S) pertaining to the equipment.

1-3. Forms and Records

a. *Reports of Maintenance and Unsatisfactory Equipment*. Maintenance forms, records, and reports which are to be used by maintenance personnel at all maintenance levels are listed in and prescribed by TM 38-750.

b. *Report of Packaging and Handling Deficiencies*. Fill out and forward DD Form 6 (Packaging Improvement Report) as prescribed in AR 700-58/NAVSUPINST 4030.29/AFR 71-13/MCO P4030.29A, and DSAR 4145.8.

c. *Discrepancy in Shipment Report (DISREP) (SF 361)*. Fill out and forward Discrepancy in Shipment Report (DISREP) (*SF 361*) as prescribed in AR 55-38/NAVSUPINST 4610.33A/AFR 75-18/MCO P4610.19B, and DSAR 4500.15.

1-4. Reporting of Errors

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

1-5. Administrative Storage

The procedures for administrative storage are outlined in TM 740-90-1; however, the exact procedure in repacking for limited storage depends on the materials available and the conditions under which the equipment is to be stored.

1-6. Destruction of Army Materiel to Prevent Enemy Use

Destruction of the ME-202(*)/U will be undertaken only, when in the judgment of the unit commander concerned, such action is necessary in accordance with orders or policy established by the Army commander. This action will normally be required only when the equipment is in immediate danger of capture by enemy forces or abandonment on the battlefield. Refer to TM 750-244-2 for procedures to be followed when destruction of the equipment is ordered.

Section II. DESCRIPTION AND DATA

1-7. Purpose and Use

Electronic Voltmeter ME-202(*)/U is a portable, precision instrument capable of accurately measuring voltages between 0 and 500 volts direct current (dc) or 0.001 and 500 volts alter-

nating current (at) and resistance between 1 megohm and 250,000 megohms. Voltages may be measured by using the electronic voltmeter either as a vacuum tube voltmeter or as a differential voltmeter.

1-8. Description

The Electric Voltmeter ME-202(*)/U is a single chassis unit enclosed in a metal case. The meter, operating controls and input connectors are mounted on the front panel. The adjustment of the front panel controls adjusts a precision dc internal voltage to equal the external voltage being measured; equality is indicated by a null on the panel meter; ac voltages are first converted to a dc voltage for measurement. The power fuse, recorder output connectors, recorder gain and adjustment, and the power supply cord are located on the back panel.

1-9. Tabulated Data

a. *Technical Characteristics.* The technical data for the Electronic Voltmeter ME-202(*)/U including ranges, accuracy and tolerances are listed in tables 1-1 through 1-7.

b. *Stability of Reference Supply.*

(1) ± 0.0025 percent for 10 percent change in line voltage.

(2) ± 0.005 percent per hour after 30-minute warmup (adjustable front panel CALIBRATE control).

c. *Operating Temperature Range.*

(1) Within dc specifications from 40° F. to 105° F. De-rate accuracy at 0.001 percent per °F. outside these limits to 35° F. and 110° F.

(2) Within ac specifications from 55° F. to 95° F. De-rate accuracy at 0.005 percent per °F. outside these limits to 35° F. and 110° F.

CAUTION

The standard cell may freeze if subjected to below freezing temperature. The electrolyte will freeze at 1° F. and operation below 32° F. is definitely not recommended.

d. *Calibration.* The 500-volt dc reference supply is calibrated against a built-in standard cell.

e. *Input Power.* 115/230 vac, 50 to 440 Hz, 75 watts.

f. *Number of Tubes.* 8.

g. *Weight.* 28 lbs.

1-10. Items Comprising an Operable Equipment

Electronic Voltmeter ME-202(*)/U comprises an operable equipment.

Table 1-1. Conventional Vacuum Tube Voltmeter Specifications*

Range	Input impedance	Scale
0 to ± 500 Vdc	50 megohms	500-0-500
0 to ± 50 Vdc	50 megohms	50-0-50
0 to ± 10 Vdc	10 megohms	10-0-10
0 to ± 5 Vdc	50 megohms	5-0-5
0 to ± 1 Vdc	10 megohms	1-0-1
0 to ± 0.5 Vdc	50 megohms	0.5-0-0.5
0 to ± 0.1 Vdc	10 megohms	0.1-0-0.1
0 to ± 0.01 Vdc	1 megohm	0.01-0-0.01
0 to 500 Vac	1 megohm 35 μ f	0-500
0 to 100 Vac	1 megohm 35 μ f	0-100
0 to 50 Vac	1 megohm 35 μ f	0-50
0 to 10 Vac	1 megohm 35 μ f	0-10
0 to 5 Vac	1 megohm 50 μ f	0-5
0 to 1 Vac	1 megohm 35 μ f	0-1
0 to 0.5 Vac	1 megohm 50. μ f	0-0.5
0 to 0.1 Vac	1 megohm 35 μ f	0-0.1
0 to 0.01 Vac	1 megohm 50 μ f	0-0.01
0 to 0.001 Vac	1 megohm 50 μ f	0-0.001

* Accuracy: 3 percent on all ranges