

# TM 11-6625-537-15

DEPARTMENT OF THE ARMY TECHNICAL MANUAL

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OPERATOR,  
ORGANIZATIONAL, FIELD,  
AND DEPOT MAINTENANCE MANUAL

DIFFERENTIAL VOLTMETER ME-202/U

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HEADQUARTERS, DEPARTMENT OF THE ARMY  
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Technical Manual )  
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HEADQUARTERS,  
DEPARTMENT OF THE ARMY  
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Operator, Organizational, Field, and Depot Maintenance Manual

DIFFERENTIAL VOLTMETER M3-202/U

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**CIRCUIT DIAGRAM**

# SECTION I

## INTRODUCTION AND SPECIFICATIONS

### 1-1. GENERAL

a. The Model 803 AC-DC Differential Voltmeter has enjoyed wide acceptance in the field of voltage measurement. The high accuracy, portability, and compactness of the 803 make this instrument ideal for almost any application. Ease of operation and high reliability contribute to the outstanding performance which makes the 803 a Universally accepted instrument.

b. The heart of the 803 is a precision 500 V DC reference power supply. This 500 volts can be precisely divided into increments as small as 10 microvolt by means of five voltage dials. Unknown AC or DC voltages are matched against the precise internal voltage until no deflection occurs on the panel meter. The un-

known voltage is then simply read from the voltage dials. In the highest null sensitivity range, potential differences between unknown and reference voltage as small as 0.01 volts will cause full scale meter deflection.

c. At null, the 803 presents an infinite input impedance to the voltage under measurement, thereby completely eliminating circuit loading.

d. The instrument may also be used as a conventional VTVM or as a megohmmeter.

e. The Model 803 has been thoroughly checked and tested prior to shipment, and is ready for immediate use. Upon receipt, inspect carefully for any damage that may have occurred in transit.

### 1-2. SPECIFICATION

Following are the specifications of the Model 803.			Resolution:		
Input Voltage Range	Recommended Null Range	Input Impedance At Null	Input Voltage Range	Dial Resolution (Volts)	Meter Resolution (Volts)
<b>DC:</b>			<b>DC:</b>		
50-500	10-0-10 1-0-1	Infinite "	50-500	0.01	0.005
5-50	1-0-1 0.1-0-0.1	" "	5-50	0.001	0.0005
0.5-5	0.1-0-0.1 0.01-0-0.01	" "	0.5-5	0.0001	0.00005
0-0.5	0.1-0-0.1 0.01-0-0.01	" "	0-0.5	0.00001	0.00005
<b>AC:</b>			<b>AC:</b>		
50-500	10-0-10 1-0-1	1M, 25 uuf "	50-500	0.01	0.005
5-50	1-0-1 0.1-0-0.1	" "	5-50	0.001	0.0005
05-5	0.1-0-0.1 0.01-0-0.01	" "	0.05-5	0.0001	0.00005
			<b>Accuracy:</b>		
			DC: $\pm 0.05\%$ of input voltage from 0.1 to 500 V $\pm 0.1\%$ of input voltage or 0.00005 V, whichever is greater from 0 to 0.1 V.		
			AC: $\pm 0.2\%$ of input voltage from 0.5 to 500 V, reduced accuracy from 0.05 to 0.5 V.		