

TM 11-2050

DEPARTMENT OF THE ARMY TECHNICAL MANUAL

TEST SET I-48-B

A N D

O H M M E T E R Z M - 2 1 A / U

This copy is a reprint which includes current
pages from Change 1.

DEPARTMENT OF THE ARMY 01 NOVEMBER 1954

TEST SET I-48-B AND OHMMETER ZM-21A/U

	<i>Paragraph</i>	<i>Page</i>
CHAPTER 1. INTRODUCTION		
Section I. General -----	1, 2	2
II. Description and data -----	3-8	2
CHAPTER 2. OPERATION		
Section I. Service upon receipt of materiel -----	9-11	12
II. Operation under usual conditions -----	12-29	13
III. Operation under unusual conditions. -----	30-33	27
CHAPTER 3. ORGANIZATIONAL, MAINTENANCE		
Section I. Organizational equipment -----	34, 35	29
II. Preventive maintenance -----	36-38	30
III. Weatherproofing -----	39-42	33
IV. Troubleshooting at organizational maintenance level -----	43-45	33
CHAPTER 4. THEORY -----	46-51	35
5. FIELD MAINTENANCE		
Section I. Prerepair procedures -----	52-55	41
II. Troubleshooting at field maintenance level. -----	56-59	43
III. Repairs -----	60-70	45
IV. Calibration and adjustment -----	71-73	48
CHAPTER 6. SHIPMENT, LIMITED STORAGE, AND DEMOLITION TO PREVENT ENEMY USE		
Section I. Shipment and limited storage -----	74, 75	53
II. Demolition of materiel to prevent enemy use -----	76, 77	54
INDEX -----		55

CHAPTER 1

INTRODUCTION

Section I. GENERAL

1. Scope

This technical manual contains a physical description of Test Set I-48-B and Ohmmeter ZM21A/U, operating instructions, organizational maintenance information, the theory of operation, repair of the equipment, instructions for removing the equipment from service and repacking for shipment or limited storage, and instructions for demolishing the equipment to prevent enemy use. These instructions apply only to Test Set I-48-B and Ohmmeter ZW21A/U.

2. Forms and Records

The following forms will be used for reporting unsatisfactory conditions of Army equipment:

a. DD Form 6 (Report of Damaged or Improper Shipment) will be filled out and forwarded, as prescribed in SR 745-45-5 (Army), Navy Shipping Guide, Article 1850-4, and AFR 71-4 (Air Force).

b. DA Form 468 (Unsatisfactory Equipment Report) will be filled out and forwarded to the Office of the Chief Signal Officer as prescribed in SR 700-45-5.

c. DD Form 535 (Unsatisfactory Report) will be filled out and forwarded as prescribed in SR 700-45-5 and TO 00-35D-54.

d. Use other forms and records as authorized.

Section II. DESCRIPTION AND DATA

3. Description

Test Set I-48-B and Ohmmeter ZM-21A/U (fig. 1) are self-contained, portable, constant-voltage insulation resistance measuring sets. Each instrument consists of a high-range ohmmeter of special design, mounted in a molded plastic case with a hand-operated direct-current (dc) generator. By removing the end shield, located at one end of the case (fig. 1), the ohmmeter chassis can be removed for inspection and replacement of generator and meter parts. Three binding posts for external connections are located on the end of the case opposite the end shield. The meter scale, located at the top of the case, is protected by a cover hinged to pillow blocks. A condensed summary of operating instructions is mounted on the back of the meter window cover.

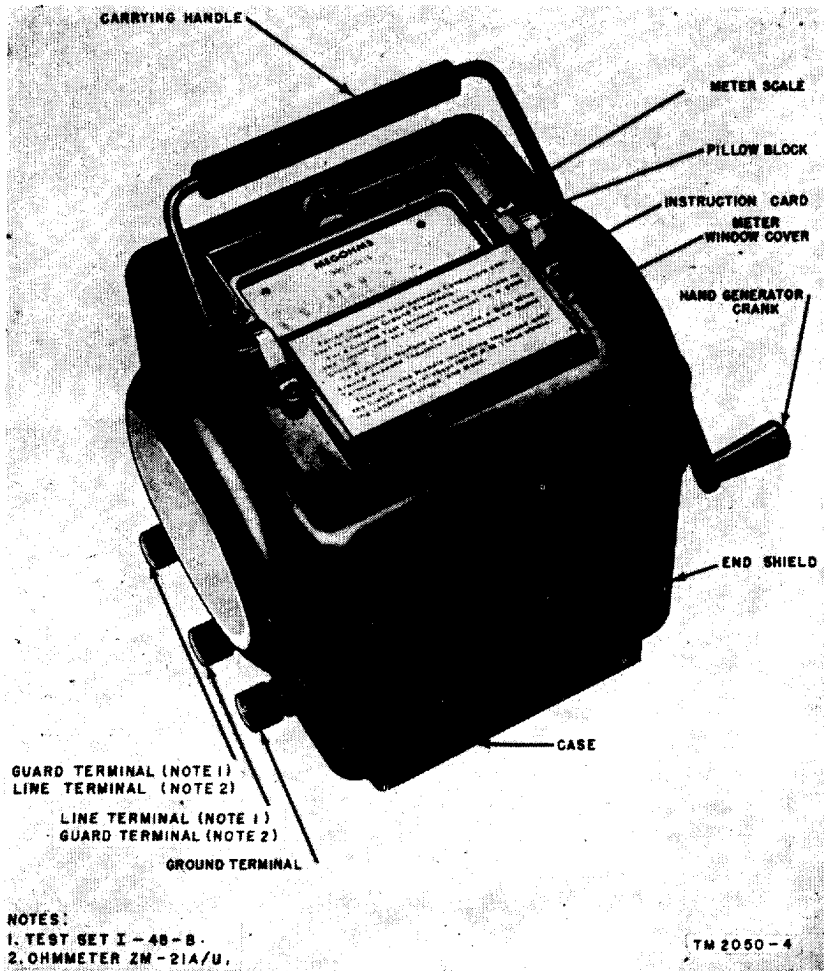


Figure 1. Test set I-48-B or ohmmeter ZM-21A/U.

4. Application

a. Test Set I-48-B or Ohmmeter ZW21A/U is used to determine the condition of the insulation of the following: telephone cables and wire lines; between conductors of cables; between windings and windings to ground of transformers; between windings and windings to frame of rotating equipment (e. g. motors); all other types of electrical equipment of which insulation resistance is an important factor. In addition, the ohmmeter may be used to locate low insulation resistance in cable.

b. The ohmmeter, which applies a high potential to equipment under test, often will show up low insulation resistance which might read satisfactorily when tested with a conventional ohmmeter which applies a 3- to 6-volt potential.