
TECHNICAL MANUAL

OPERATOR'S, ORGANIZATIONAL, DIRECT SUPPORT AND
GENERAL SUPPORT MAINTENANCE MANUAL
(INCLUDING REPAIR PARTS AND SPECIAL TOOLS LISTS)
FOR

MULTIMETER ME-498/U (HEWLETT-PACKARD
MODEL 34702A) (NSN 6625-00-538-9794)
AND
INDICATOR ID-2101/U (HEWLETT-PACKARD
MODEL 34750A) (NSN 6625-00-538-9758)

HEADQUARTERS, DEPARTMENT OF THE ARMY

JUNE 1979

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TECHNICAL MANUAL

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HEADQUARTERS
DEPARTMENT OF THE ARMY
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**OPERATOR'S, ORGANIZATIONAL, DIRECT SUPPORT AND
GENERAL SUPPORT MAINTENANCE MANUAL
(INCLUDING REPAIR PARTS AND SPECIAL TOOLS LISTS)
FOR
MULTIMETER ME-4981U (HEWLETT-PACKARD MODEL 34702A)
(NSN 6625-00-538-9794)
AND
INDICATOR ID-21011U (HEWLETT-PACKARD MODEL 34750A)
(NSN 6625-00-538-9758)**

REPORTING OF ERRORS

You can improve this manual by recommending improvements using DA Form 2028-2 located in the back of the manual. Simply tear out the self-addressed form, fill it out as shown on the sample, fold it where shown, and drop it in the mail.

If there are no blank DA Forms 2028-2 in the back of your manual, use the standard DA Form 2028 (Recommended Changes to Publications and Blank Forms) and forward to Commander, US Army Communications and Electronics Materiel Readiness Command, ATTN: DRSEL-ME-MQ, Fort Monmouth, NJ 07703.

In either case a reply will be forwarded direct to you.

This manual is an authentication of the manufacturer's commercial literature which, through usage, has been found to cover the data required to operate and maintain this equipment. Since the manual was not prepared in accordance with military specifications and AR 310-3, the format has not been structured to consider levels of maintenance.

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PART ONE

OPERATING AND SERVICE MANUAL

Binder part No. 34740-90011

(Includes cover sheet)

Manual Part No. 34740-90012 or 34750-90012

(Binder, System Introduction and Display Manual)

MODEL 3470

MEASUREMENT SYSTEM

IMPORTANT NOTICE

This instruction manual requires no change sheet. Any change information has already been integrated into the manual by page revisions. Revised pages have a revision letter which can be found on the lower corner of the page. Reference may also be made to Section VIII of each manual where backdating information for earlier instruments can be found.

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HEWLETT



PACKARD

CERTIFICATION

Hewlett-Packard Company certifies that this instrument met its published specifications at the time of shipment from the factory. Hewlett-Packard Company further certifies that its calibration measurements are traceable to the United States National Bureau of Standards, to the extent allowed by the Bureau's calibration facility, and to the calibration facilities of other International Standards Organization members.

WARRANTY AND ASSISTANCE

This Hewlett-Packard product is warranted against defects in materials and workmanship for a period of one year from the date of shipment, except that in the case of certain components, if any, listed in Section I of this operating manual, the warranty shall be for the specified period. Hewlett-Packard will, at its option, repair or replace products which prove to be defective during the warranty period provided they are returned to Hewlett-Packard, and provided the proper preventive maintenance procedures as listed in this manual are followed. Repairs necessitated by misuse of the product are not covered by this warranty. NO OTHER WARRANTIES ARE EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. HEWLETT-PACKARD IS NOT LIABLE FOR CONSEQUENTIAL DAMAGES.

If this product is sold as part of a Hewlett-Packard integrated instrument system, the above warranty shall not be applicable, and this product shall be covered only by the system warranty.

Service contracts or customer assistance agreements are available for Hewlett-Packard products.

For any assistance, contact your nearest Hewlett-Packard Sales and Service Office. Addresses are provided at the back of this manual.

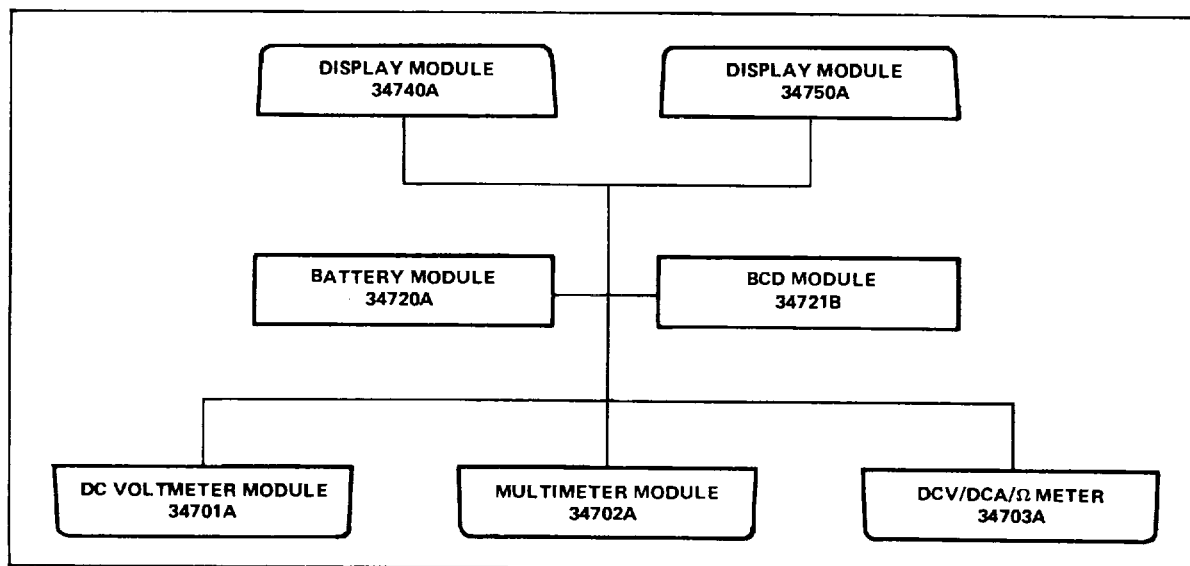
INTRODUCTION

The 3470 Measurement System is a series of modules that may be plugged together to form several different measuring instruments, including both line powered and battery powered versions.

A mainframe display module is connected to a bottom plug-on function module to form a complete instrument.

The BCD and/or Battery plug-on module may be added between the display and function modules as desired.

Refer to the Operating and Service Manual of the plug-on module to be used with the display module for the operating instructions, incoming inspection, and adjustment procedures of the instrument as a whole.



Possible Instrument Configurations

SECTION 0 INTRODUCTION

0-1. SCOPE.

a. This manual in Part 1, describes Multimeter ME-498/U (fig. 3-1) and provides instructions for operation and maintenance. Throughout this manual the ME-498/U is referred to as the Hewlett-Packard Model 34702A.

b. Part 2 describes Indicator ID-2101/U (fig.1-1, Part 2). This display module is referred to as the Hewlett-Packard Model 34750A.

0-2. INDEXES OF PUBLICATIONS.

a. *DA Pam 310-4.* 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.

0-3. 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 70058/NAVSUPINST 4030.29/AFR 71-13/MCOP40 30.29A and DLAR 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 4610.33B/AFR 7518/MCO P4610.19C and DLAR 4500.15.

0-4. REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATIONS (EIR).

EIR's will be prepared using SF 368 (Quality Deficiency Report). Instructions for preparing EIR's are provided in TM 38-750, the Army Maintenance Management System. EIR's should be mailed direct to Commander, US Army Communication and Electronics Materiel Readiness Command, ATTN: DRSEL-ME-MQ, Fort Monmouth, NJ A reply will be furnished direct to you.

0-5. ADMINISTRATIVE STORAGE.

Administrative storage of equipment issued to and used by Army activities shall be in accordance with TM 740-90-1 and paragraph 2-8.

0-6. DESTRUCTION OF ARMY ELECTRONICS MATERIEL.

Destruction of Army electronics materiel to prevent enemy use shall be in accordance with TM 750-244-2.

SECTION I

GENERAL INFORMATION

1-1. INTRODUCTION.

1-2. This manual contains installation and operating instructions as well as maintenance information which includes performance checks for the Model 34702A. A schematic diagram, theory of operation, and troubleshooting information are provided for use in maintaining the 34702A Multimeter Module.

1-3. DESCRIPTION.

1-4. The Hewlett-Packard Model 34702A Multimeter is a signal conditioning module that may be connected to a Model 34740A or 34750A Display Module, to measure AC Voltage, DC Voltage, or resistance. The AC and DC volts functions provide four decade ranges from 1 V to 1000 V. Six resistance ranges from 100 Ω full scale to 10 MQ full scale are provided by the " Ω (fy)" function. Each available range of the Model 34702A has 100% overranging capability except the 1000 V range which has 20%.



Overload protection circuits allow up to 1200 V peak to be applied to the INPUT V terminals without damaging the instrument. Up to 350 V can be applied to the INPUT S terminals without damaging the instrument. No more than 500 V should be applied between LO and Chassis. Do not apply voltage between LO and Chassis when using the 34721A or 34721B BCD Module. These modules connect LO to Chassis when attached to the Model 34 702A.

1-5. SPECIFICATIONS AND GENERAL INFORMATION.

1-6. Table 1-1 lists specifications for the Model 34702A Multimeter. This table supersedes all other previously printed specifications. Procedures are provided in Section V to verify performance of the instrument to its specifications and to readjust the instrument if required. The accuracy specifications apply for ambient temperatures of $23^{\circ}\text{C} \pm 5^{\circ}\text{C}$. For temperatures outside this range, a temperature coefficient factor (listed in Table 1-1) must be used.

1-7. Table 1-2 lists general information relating to the instrument.

1-8. INSTRUMENT AND MANUAL IDENTIFICATION.

1-9. A three-section serial number (xxxxAxxxxx) is used to identify your Model 34702A. Figure 1-1 illustrates the meaning of the three parts of the number.

1-10. This manual is kept up-to-date with revised pages. If the serial number of your instrument is lower than the one on the title page of this manual, refer to the backdating information in Appendix A which adapts this manual to your instrument. All correspondence with Hewlett-Packard Company should include the complete serial number.

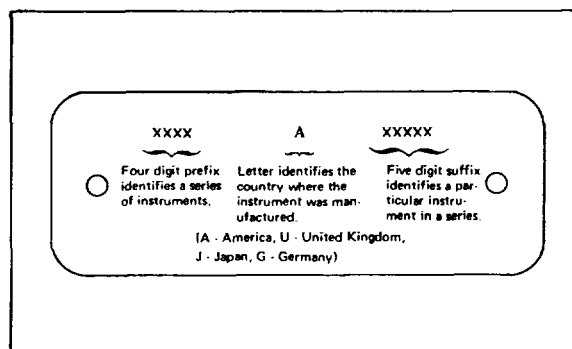


Figure 1-1. Instrument Serial Number.