

## SPECIFICATIONS

### ELECTRONIC DC VOLTMETER

7 Ranges. . . . .	0-1.5, 5, 15, 50, 150, 500, 1500 volts full scale.
Input Resistance. . . . .	11 megohms (1 megohm in probe) on all ranges.
Circuit. . . . .	Balanced bridge (push-pull) using twin triode.
Accuracy. . . . .	±3% full scale.

### ELECTRONIC AC VOLTMETER

7 rms Ranges. . . . .	0-1.5, 5, 15, 50, 150, 500, 1500 rms scales (.353 of peak-to-peak).
7 Peak-to-Peak Ranges. . . . .	0-4, 14, 40, 140, 400, 1400, 4000 volts full scale.
Frequency Response (5 V Range). . . . .	±1 db 25 cps to 1 mc (600 $\Omega$ source).
Accuracy. . . . .	±5% full scale.
Input Resistance And Capacitance. . . . .	1 megohm shunted by 45 $\mu\mu\text{f}$ (measured at input terminals).

### ELECTRONIC OHMMETER

7 Ranges. . . . .	Scale with 10 $\Omega$ center X1, X10, X100, X1000, X10K, X100K, X1MEG. Measures .1 $\Omega$ to 1000 megohms with internal battery.
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### GENERAL

Meter. . . . .	4-1/2", 200 $\mu\text{a}$ movement, polystyrene case. Meter terminals brought out to front panel to facilitate external connections.
Probes. . . . .	Combined AC-OHMS-DC switching probe, single jack input for probe and ground connections.
Front Panel Controls. . . . .	Function Switch (OFF, AC, DC-, DC+, OHMS). Range Switch (AC and DC volts, and ohms). Zero Adjust. Ohms Adjust.
Controls Accessible Through Front Panel. . . . .	AC Balance. DC Calibrate. AC Calibrate.
Multipliers. . . . .	1% precision type.
Circuit Board. . . . .	Printed circuit; etched metal process.

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Tubes. . . . .	1 - 12AU7, twin triode meter bridge. 1 - 6AL5, twin diode half-wave voltage doubler.
Power Indicator. . . . .	Neon lamp.
Battery. . . . .	1.5 volt, size C flashlight cell.
Power Requirements. . . . .	105-125 volts, 50/60 cps AC, 10 watts.
Cabinet Size. . . . .	6-1/2" high x 11-1/2" wide x 5" deep.
Net Weight. . . . .	4-1/4 lbs.
Shipping Weight. . . . .	6 lbs.

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All prices are subject to change without notice. The Heath Company reserves the right to discontinue instruments and to change specifications at

any time without incurring any obligation to incorporate new features in instruments previously sold.

## INTRODUCTION

The Heath Model EUW-24 Vacuum Tube Voltmeter has been designed to provide dependable measurement of AC and DC voltages, and ohms. The use of 1% multiplier resistors and a printed circuit board for the tube stages insure accurate stable circuit operation. Voltage for resistance measurements is obtained from a size C flashlight cell. All operating controls are located on the front panel; the internal controls can be adjusted with a screwdriver through small access holes in the front panel.

A single test probe is used for all measurements. The handy thumb switch in the probe uses one position for DC voltage measurements, and the other position for AC voltage and resistance measurements. In the DC position of this switch, the 1 megohm isolating resistor in the probe is switched into the circuit. The test probe and ground lead are connected to the front panel of the VTVM through a single plug-jack connection.

The terminals of the meter in the VTVM are brought out to jacks on the front panel. These jacks are intended for use with an external read-out device, such as the Heath EUW-20A Pen Recorder or the large-scale Classroom Servo-Meter.

This highly versatile instrument will find many uses in all phases of electronics. Its accuracy, high input impedance, damage-proof meter circuit, and many measurement functions make it ideal for research, design, repair, and classroom demonstration applications.

This instrument is one of the units included in the Malmstadt-Enke EU-100A Instrumentation Laboratory. It is available as an individual unit, or it can be purchased at a special group price when included with the total EU-100A system. The units of the complete EU-100A Laboratory Station are useful not only in learning electronic concepts, but also in research and development, and control instrumentation.

NOTES:

ALL RESISTANCES IN OHMS (K = 1000, MEG = 1,000,000).  
ALL RESISTORS 1/2 WATT UNLESS OTHERWISE SPECIFIED.  
ALL CAPACITORS IN  $\mu\text{f}$  UNLESS OTHERWISE SPECIFIED.  
ALL VOLTAGES MEASURED WITH RESPECT TO CHASSIS GROUND.

ALL VOLTAGES POSITIVE UNLESS OTHERWISE SPECIFIED.  
VOLTAGES TAKEN WITH AN 11 MEGOHM VTVM.  
ALL SWITCHES VIEWED FROM THE REAR.  
FUNCTION SWITCH IN AC POSITION.  
RANGE SWITCH IN 1.5 V POSITION.  
⊖ CONTROL ACCESSIBLE THROUGH FRONT PANEL.

SCHEMATIC OF THE  
HEATH SCIENCE SERIES  
VTVM  
MODEL EUW-24

