OMEGA

HHM64
Digital Multimeter

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SAFETY INFORMATION

The following safety information must be observed to insure maximum personal safety during the operation at this meter:

1. Do not use the meter if the meter or test leads look damaged, or if you suspect that the meter is not operating properly.
2. This meter is not recommended for high voltage industrial use; for example, not for measurements of 440 VAC or 600 VAC industrial power mains. The unit is intended for use with low energy circuits to 600V AC/DC or high energy circuit to 250 VAC or DC.
3. Use caution when working above 60V dc or 30V ac rms. Such voltages pose a shock hazard.
4. When using the probes, keep your fingers behind the finger guards on the probes.
5. Measuring voltage which exceeds the limits of the meter may cause damage and expose the operator to a shock hazard. Always respect the voltage limits as stated on the meter.
6. If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

SPECIFICATIONS

Display: 3½ digit liquid crystal display (LCD) with a maximum reading of 3200.
Analog bar graph: 32 segments with measurements 12 times per second.
Polarity: Automatic, (-) negative polarity indication.
Overrange: "OL" mark indication.
Low battery indication: The "  " is displayed when the battery voltage drops below the operating level.
Auto power-down: After 10 mins, Back-Light after 30 secs approx.
Measurement rate: 2 times per second, nominal.
Operating environment: 0°C to 50°C at <70% relative humidity.
Storage environment: -20°C to 60°C at <80% relative humidity.
Safety: According to EN61010-1 protection class II overvoltage category (CAT II 600V) pollution degree 2.
Power: 4 pcs 1.5V (AAA size).
Battery life: 500 hours typical.
Dimensions: 170mm (H) x 44mm (W) x 40mm (D).
Weight: 140g including batteries.

DC Voltage (50Hz - 400Hz)

Ranges	320mV, 3.2V, 32V, 320V, 600V
Accuracy	±0.25%rdg + 1digit
Input impedance	320mV: >1000MW; 3.2V: 11MW, 32V to 600V: 10MW
Maximum input	600VDC or AC rms

AC Voltage (50Hz - 400Hz)

Ranges	3.2V, 32V, 320V, 600V
Accuracy	±0.75%rdg + 4digits
Input impedance	320mV: >1000MW; 3.2V: 11MW, 32V to 600V: 10MW
Maximum input	600VDC or AC rms

Resistance (effective reading above 100 digits)

Ranges	320Ω, 3.2KΩ, 32KΩ, 320KΩ, 3.2MΩ, 32MΩ
Resolution	320Ω: 0.1Ω; 3.2KΩ: 1Ω; 32KΩ: 10Ω;
	320KΩ: 100Ω; 3.2MΩ: 1KΩ; 32MΩ: 10KΩ
Accuracy	320Ω: ±0.3%rdg + 3dgts
	3.2KΩ to 320KΩ: ±0.3%rdg + 3dgts
	3.2MΩ: ±1.2%rdg + 1dgt
	32MΩ: ±3.0%rdg + 1dgt
Test current	320Ω: <0.7mA; 3.2KΩ: <0.13mA; 32KΩ: <13μA;
	320KΩ: <1.3μA; 3.2MΩ, 32MΩ: <0.13μA
Input protection	500VDC or AC rms

Diode Test

Test range	0 - 2.0V
Resolution	1mV
Accuracy	±10%rdg + 3dgts
Test current	0.8mA±0.6mA
Input protection	500VDC or AC rms

Continuity beeper

Range	320Ω
Resolution	0.1Ω
Audible indication	<20Ω±5Ω
Test current	<0.7mA
Input protection	500VDC or AC rms

OPERATION

Before taking any measurements, read the Safety Information Section. Always examine the instrument for damage, contamination (excessive dirt, grease, etc.) and defects. Examine the test leads for cracked or frayed insulation. If any abnormal conditions exist do not attempt to make any measurements.

Autoranging

The meter defaults to autorange when you turn it on. In autorange, the meter selects the range automatically.

Manually Selecting a Range

The meter also has a manual range mode. In manual range, you select and lock the meter in a range. To manually select a range:

Press [RANGE] button to hold the selected range. The ⊙ symbol is displayed. Subsequently pressing the [RANGE] button will select each range in sequence from the lowest to highest range. Hold the button for 2 seconds to return to the Autorange Mode.

Mode Switch (⎓/∼), (Ω /•))/→|)

Press this switch to toggle between DC and AC in the voltage measurements.

Press this switch to toggle between the Ω/continuity/diode modes. If the function switch is set to Ω /•))/→| position.

Back-Light and Data-Hold Switch (☼>2sec),(H):

Press this button briefly to activate DATA-HOLD mode. The "H" annunciator is displayed.

Press this button for two seconds to turn the Back-Light on. As this also activates the DATA-HOLD mode, briefly press the button to return to normal display. To turn the Back-Light off press again for two seconds. The Back-Light will switch-off automatically after about 30 seconds.

Auto Power-down mode:

If unused for about 10 minutes, the tester will power-down automatically. Press any of the three button switches to resume power-on mode.

Voltage Measurements

1. Connect a red test probe to the "VΩ" jack and the black test lead to the "COM" jack.
2. Set the Function switch to the "~V/⎓V" position and press the mode switch to select DC or AC.
3. Touch the probes to the test points, the range will change automatically to the level that will display the input voltage with best resolution.
4. The value indicated in the display window is the measured value of voltage with proper decimal point and annunciator indication.
5. For dc, a (-) sign is displayed for negative polarity; positive polarity is implied.

Resistance Measurements

1. Set the Function switch to the " Ω " position.
2. Turn off power to the circuit under test. External voltage across the components causes invalid readings.
3. Connect a red test probe to the "VΩ" jack and the black test lead to the "COM" jack.
4. Connect the test leads to measurement points and read the value from the display.

WARNING

The accuracy of the functions might be slightly affected, when exposed to a radiated electromagnetic field environment, eg, radio, telephone or similar.

Diodes Testing

1. Set the Function switch to "Ω /•)) /→|" position.
2. Turn off power to the circuit under test. External voltage across the components causes invalid readings.
3. To toggle between the Ω/continity/diode modes, press Mode Switch.

4. Touch probes to the diode. A forward-voltage drop is about 0.6V (typical for a silicon diode).
5. Reverse probes. If the diode is good, "OL" is displayed. If the diode is shorted, a value near 0mV will be displayed.
6. If the diode is open, "OL" is displayed in both directions.

Continuity Measurements

1. Set the Function switch to "Ω /•))/→| " position.
2. Turn off power to the circuit under test. External voltage across the components causes invalid readings.
3. To toggle between the Ω/continity/diode modes, press Mode Switch.
4. Connect the test leads to the two points at which continuity is to be tested. The buzzer will sound if the resistance is less than approximately 20Ω±5Ω.

MAINTENANCE

WARNING

Remove test leads before changing batteries or fuse
or performing any servicing.

Battery Replacement

Power is supplied by four 1.5V (AAA size) batteries. The "  " appears on the LCD display when replacement is needed.To replace the batteries, remove the screw from the back of the meter and lift off the battery cover case. Remove the batteries from battery contacts.

Cleaning

Periodically wipe the case with a damp cloth and detergent, do not use abrasives or solvents.

WARRANTY

OMEGA warrants this unit to be free of defects in materials and workmanship and to give satisfactory service for a period of 13 **months** from date of purchase. OMEGA Warranty adds an additional one (1) month grace period to the normal **one (1) year product warranty** to cover handling and shipping time. This ensures that OMEGA's customers receive maximum coverage on each product. If the unit should malfunction, it must be returned to the factory for evaluation. OMEGA's Customer Service Department will issue an Authorized Return (AR) number immediately upon phone or written request. Upon examination by OMEGA, if the unit is found to be defective it will be repaired or replaced at no charge. However, this WARRANTY is VOID if the unit shows evidence of having been tampered with or shows evidence of being damaged as a result of excessive corrosion; or current, heat moisture or vibration; improper specification; misapplication; misuse or other operating conditions outside of OMEGA's control. Components which wear or which are damaged by misuse are not warranted. This includes contact points, fuses, and triacs.

OMEGA is glad to offer suggestions on the of use of its various products. Nevertheless, OMEGA only warrants that the parts manufactured by it will be as specified and free of defects

OMEGA MAKES NO OTHER WARRANTIES OR REPRESENTATIONS OF ANY KIND WHATSOEVER, EXPRESSED OR IMPLIED, EXCEPT THAT OF TITLE AND ALL IMPLIED WARRANTIES INCLUDING ANY WARRANTY OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE HEREBY DISCLAIMED.

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Every precaution for accuracy has been taken in the preparation of this manual; however, OMEGA ENGINEERING, INC. neither assumes responsibility for any omissions or errors that may appear nor assumes liability for any damages that result from the use of the products in accordance with the information contained in the manual.

SPECIAL CONDITION: Should this equipment be used in or with any nuclear installation or activity, purchaser will indemnity OMEGA and hold OMEGA harmless from any liability or damage whatsoever arising out of the use of the equipment in such a manner.

It is the policy of OMEGA to comply with all worldwide safety and EMC/EMI regulations that apply. OMEGA is constantly pursuing certification of its products to the European New Approach Directives. OMEGA will add the CE mark to every appropriate device upon certification.

The information contained in this document is believed to be correct but OMEGA Engineering, Inc. accepts no liability for any errors it contains, and reserves the right to alter specifications without notice.

WARNING: These products are not designed for use in, and should not be used for, patient connected application.

RETURN REQUESTS / INQUIRIES

Direct all warranty and repair requests/inquiries to the OMEGA Customer Service Department. BEFORE RETURNING ANY PRODUCT(S) TO OMEGA, PURCHASER MUST OBTAIN AN AUTHORIZED RETURN (AR) NUMBER FROM OMEGA'S CUSTOMER SERVICE DEPARTMENT (IN ORDER TO AVOID PROCESSING DELAYS). The assigned AR number should then be marked on the outside of the return package and on any correspondence.

The purchaser is responsible for shipping charges, freight, insurance and proper packaging to prevent breakage in transit.

FOR **WARRANTY** RETURNS, please have the following information available BEFORE contacting OMEGA:

1. P.O. number under which the product was PURCHASED.
2. Model and serial number of the product under warranty, and
3. Repair instructions and/or specific problems relative to the product.

FOR **NON-WARRANTY** REPAIRS, consult OMEGA for current repair charges. Have the following information available BEFORE contacting OMEGA:

1. P.O. number to cover the COST of the repair.
2. Model and serial number of product , and
3. Repair instructions and/or specific problems relative to the product.

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