OMEGA

HHM30
Digital LCR Meter

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SPECIFICATIONS

Display: 3½ digit liquid crystal display (LCD) with a maximum reading of 1999.
Polarity: Automatic, positive implied, negative polarity indication.
Overrange: (OL) or (-OL) is displayed.
Zero: Automatic.
Low battery indication: the "  " is displayed when the battery voltage drops below the operating level.
Measurement rate: 2.5 times per second, nominal.
Operating Environment: 0°C to 40°C at < 70% relative humidity.
Storage Temperature: -20°C to 60°C, 0 to 80% R.H. with battery removed from meter.
Accuracy: Stated accuracy at 23°C ± 5°C, <75% relative humidity.
Power: single standard 9-volt battery.
Battery life: 30 hours typical.
Dimensions: 200mm (H) x 90mm (W) x 40mm (D).
Weight: Approx. 14 oz. (400g) including battery.
Accessories: One pair test leads, One spare fuse installed, 9V battery and Operating Instructions.

RESISTANCE

Ranges: 20W ,200W ,2KW ,20KW ,200KW ,2MW ,20MW
Resolution: 20W range 10mW
Accuracy: ±(1.0%rdg + 10dgts) on 20W range
±(0.3%rdg + 3dgts) on 200W range
±(0.3%rdg + 1dgt) on 2KW to 2MW ranges
±(2.0%rdg + 2dgts) on 20MW range
Open circuit volts:
6.5VDC on 20W to 200W Ranges
1.2VDC on other range
Overload protection: All ranges 25VDC or AC rms
Note: in the range 20W, subtract residual offset reading from result.

DIODE TEST

Including:  ,  , microwave  , zener  (<6.8V)
Test current: 3mA (approx)
Open voltage: 8VDC typical
Accuracy: ±(10%rdg +10dgts)
Display: forward junction voltage
Overload protection: 25VDC or AC rms

CAPACITANCE

Ranges: 200pF,2nF,20nF,200nF,2µF,20µF,200µF,2000µF

Accuracy: ±(1.0%rdg + 3dgts) on 200pF to 200nF ranges
±(2.0%rdg + 3dgts) on 2µF to 200µF ranges
±(3.0%rdg + 3dgts) on 2000µF range: £1000µF
±(5.0%rdg + 10dgts) >1000µF

Test freguency:
1000Hz on 200pF to 2µF range
100Hz on 20µF to 200µF range
10Hz on 2000µF range

Temperature Coefficient:
£0.5µF: 0.1%/°C
>0.5µF: 0.2%/°C

Overload protection: 0.1A/250V fast blow fuse

Note: in lower range 200pF, 2nF subtract residual offset reading from result with test leads opening.

INDUCTANCE

Ranges: 200µH,2mH,20mH,200mH,2H,20H,200H

Accuracy: ±(3.0%rdg + 3dgts) on 200µH to 200mH ranges
±(5.0%rdg + 10dgts) on 2H to 200H ranges

Test freguency:
1000Hz on 200µH to 2H ranges
100Hz on 20H to 200H ranges

Temperature Coefficient:
£0.5H: 0.2%/°C
>0.5H: 0.5%/°C

Overload protection: 0.1A/250V fast blow fuse

Note: in lower range 200µH, 2mH subtract residual offset reading from result with test leads being shorted.

OPERATION

However, electrical noise or intense electromagnetic fields in the equipment may disturb the measurement circuit. Measuring instruments will also respond to unwanted signals that may be present within the measurement circuit. Users should exercise care and take appropriate precautions to avoid misleading results when making measurements in the presence of electronic interference.

Capacitance

1.Dischange capacitors before trying to measure it.
2.Set the Range to the desired C range.
3.Insert the leads directly in to ⊣⊢ socket or test leads sockets.
4.Never apply an external voltage to ⊣⊢ sockets damage to the meter may resuet.
5.Read the capacitance directly from the display.

Note: in lower range 200pF, 2nF subtract residual offset reading from result with test leads opening.

Inductance

1. Set the Ranges to the desired L range.
2. never apply an external voltage to the sockets damage to the meter may result.
3. Insert the inductor leads derectly into ⏤ꝏ⏤ sockets or test leards sockets.
4. Read the inductance directly from the display.

Note:in loues range 200μH, 2mH subtract residual offset reading from result with test leads being shorted.

Resistance

1. Set the Function/Range switch to the desired resistance range.
2. Remove power from the equipment under test.
3. Connect the red test lead to the **W**" **+** " jack and the black test lead to the **W**" **–** " jack.
4. Touch the probes to the test points. In ohms, the value indicated in the display is the measured value of resistance.

WARNING

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

Note:in the range 20W, subtract residual offset reading from result.

Diode Tests and Continuity Measurements

1. Connect the red test lead to the ⊣▶ " + " jack and the black test lead to the ⊣▶ " – " jack.
2. Set the Function/Range switch to the ⊣▶ , ⊣▶↗, microwave ⊣▶ , zener ⊣▶ position.
3. Turn off power to the circuit under test.
4. Touch probes to diodes. A forward-voltage drop on diode. microwave diode about 0.6VDC typical, LED about 2VDC typical, zener diode about its shown voltage .
5. Reverse probes. if the diode is good, diode, microwave diode. LED about open voltage 8VDC typical, zener diode about 0.7V typical.
6. If the junction is measured in a circuit and a low reading is obtained with both lead connections, the junction may be shunted by a resistance of less than 1kW. In this case the diode must be disconnected from the circuit for accurate testing.

MAINTENANCE

WARNING
Remove test leads before changing battery or fuse
or performing any servicing.

Battery Replacement

Power is supplied by a 9 volt "transistor" battery. (NEDA 1604 IEC 6F22). The "  " appears on the LCD display when replacement is needed. To replace the battery, remove the two screws from the back of the meter and lift off the battery case. Remove the battery from battery contacts.

Fuse Replacement

If no capacitance and inductance measurements are possible, check for a blown overload protection fuse.For access to fuses, remove the two screws from the back of the meter and lift off the battery case. Replace F1 only with the original type 0.1A/250V, fast acting fuse.

Cleaning

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

WARRANTY / DISCLAIMER

OMEGA ENGINEERING, INC. warrants this unit to be free of defects in materials and workmanship 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. OMEGA's WARRANTY does not apply to defects resulting from any action of the purchaser, including but not limited to mishandling, improper interfacing, operation outside of design limits, improper repair, or unauthorized modification. 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 are not warranted, including but not limited to contact points, fuses, and triacs.

OMEGA is pleased to offer suggestions on the use of its various products. However, OMEGA neither assumes responsibility for any omissions or errors nor assumes liability for any damages that result from the use of its products in accordance with information provided by OMEGA, either verbal or written. OMEGA warrants only 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. LIMITATION OF LIABILITY: The remedies of purchaser set forth herein are exclusive and the total liability of OMEGA with respect to this order, whether based on contract, warranty, negligence, indemnification, strict liability or otherwise, shall not exceed the purchase price of the component upon which liability is based. In no event shall OMEGA be liable for consequential, incidental or special damages.

CONDITIONS: Equipment sold by OMEGA is not intended to be used, nor shall it be used: (1) as a "Basic Component" under 10 CFR 21 (NRC), used in or with any nuclear installation or activity; or (2) in medical applications or used on humans. Should any Product(s) be used in or with any nuclear installation or activity, medical application, used on humans, or misused in any way, OMEGA assumes no responsibility as set forth in our basic WARRANTY / DISCLAIMER language, and additionally, purchaser will indemnify OMEGA and hold OMEGA harmless from any liability or damage whatsoever arising out of the use of the Product(s) in such a manner.

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.

OMEGA's policy is to make running changes, not model changes, whenever an improvement is possible. This affords our customers the latest in technology and engineering. OMEGA is a registered trademark of OMEGA ENGINEERING, INC.

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- ☑ Wire: Thermocouple, RTD & Thermistor
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