

OMEGA

HHM65

MegohmMeter



OMEGAnetSM On-Line Service
<http://www.omega.com>

Internet e-mail
info@omega.com

Servicing North America:

USA: ISO 9001 Certified Canada:

One Omega Drive, Box 4047 976 Bergar
Stamford, CT 06907-0047 Laval (Quebec) H7L5A1
Tel: (203) 359-1660 Tel: (514) 856-6928
FAX: (203)359-7700 FAX: (514) 856-6886
e-mail: info@omega.com e-mail: info@omega.com

For immediate technical or application assistance:

USA and Canada:

Sales Service: 1-800-826-6342 / 1-800-TC-OMEGASM
Customer Service: 1-800-622-2378 / 1-800-622-BESTSM
Engineering Service: 1-800-872-9436 / 1-800-USA-WHENSM
TELEX: 996404 EASYLINK: 62968934 CABLE: OMEGA

Mexico and Latin America:

Tel: (95) 800-TC-OMEGASM
FAX: (95) 203-359-7807
En Español: (203) 359-7803
e-mail: espanol@omega.com

Servicing Europe:

Benelux:

Postbus 8034, 1180 LA Amstelveen,
The Netherlands
Tel: (31) 20 6418405 FAX: (31) 20 6434643
Toll Free in Benelux: 06 0993344
e-mail: nl@omega.com

France:

9, rue Denis Papin, 78190 Trappes
Tel: (33) 130-621-400 FAX: (33)130-699-120
Toll Free in France: 0800-4-06342
e-mail: france@omega.com

United Kingdom: ISO 9002 Certified

One Omega Drive
Riverbend Technology Centre Northbank, Irlam,
Manchester, M44 5EX, England
Tel: 44 (161) 777-6611 FAX: 44 (161) 777-6622

Czech Republic:

ul. Rude armady 1868, 733 01 Karvina-
Hranice, Czech Republic
Tel: 420 (69) 6311627 FAX: 420 (69)
6311114
e-mail: czech@omega.com

Germany/Austria:

Daimlerstrasse 26, D-75392
Deckenpfronn, Germany
Tel: 49 (07056) 3017 FAX: 49 (07056) 8540
Toll Free in Germany: 0800 82 66342
e-mail: germany@omega.com

Toll Free in England: 0800-488-488

e-mail: sales@omega.com.uk

INTRODUCTION

This instrument is a portable easy use 3½ digit, compact-sized digital megohmmeter designed for simplicity one hand operation. Provides 500V to test insulation. Meter with Backlit LCD display, Auto-hold function and auto power off (15 seconds approx.) feature after releasing MEAS button to extend battery life with external power supply input jack (DC 6V).

SAFETY INFORMATION


It is recommended that you read the safety and operation instructions before using the megohmmeter.

WARNING

Remove power from circuit under test.

WARNING

To avoid electrical shock remove test leads before opening case or battery cover. Do not operate with battery cover open.


The  symbol on the instrument indicates that the operator must refer to an explanation in this manual.

SPECIFICATIONS

GENERAL

Display: 3½ digit liquid crystal display (LCD) with maximum reading of 1999.

Overrange: (OL) or (-OL) is displayed.

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.


For Indoor use only.

Altitude: UP to 2000m

Safety: According to EN61010-1 protection class II overvoltage category (CAT II 600V) pollution degree 2.

Auto power off: 15 seconds approx.

Standby consume current: <1µA.

External power: 6VDC 1A .

Battery: 4 pcs 1.5V (AAA size).

Battery Life: 10 hours (continuity) typical (@20M Ω range test 10M Ω resistor).

Dimensions: 170mm(H) x 44mm(W) x 40mm(D).

Weight: 160g including batteries.

ELECTRICAL

Range: 20M Ω , 2000M Ω

Resolution: 10K Ω on 20M Ω range

1M Ω on 2000M Ω range

Accuracy:

20M Ω range: $\pm(2\%rdg + 2dgts)$

2000M Ω range: $<500M\Omega \pm(4\%rdg + 2dgts)$

$>500M\Omega \pm(5\%rdg + 2dgts)$

Output current: 1mA dc min. at 0.5M Ω (500V)

Rated voltage: DC-DC converter to 500VDC

Accuracy temperature: 23°C \pm 5°C less than 70%RH

Temperature Coefficient: 0.1X (specified accuracy)/°C ($<18^\circ\text{C}$ or $>28^\circ\text{C}$)

OPERATING INSTRUCTIONS

Push buttons

⚙ Display Back-Light Button

Releasing MEAS button then pressing "⚙" button to toggle between turn on and turn off the Back-Light. When releasing MEAS button Back-Light will turn off automatically after 15 seconds to extend battery life.

Range Select Button

Releasing MEAS button then press 20M Ω , 2000M Ω range select button to toggle between 20M Ω and 2000M Ω ranges.

MEAS (MEASURE) Button

Depress MEAS button to turn on 500VDC (red LED lighted) for measure insulation resistance. Releasing MEAS button to turn off 500VDC and automatically hold the display reading, the meter turns off automatically after 15 seconds.

OPERATION

Check of internal battery (E,L terminals open)

1. Depress the MEAS button.
2. The 500V on LED lamp should light, indicating normal operation from the internal batteries.
3. If the 500V on LED fails to light shown the batteries are completely worn or batteries are not installed in the meter. Since either of those conditions are possible, remove the battery cover and insert at set of four type AAA cells.
4. If the 500V on LED lights (weakly) but the "E3" LCD display lights, the batteries are near the end of their life and should be replaced immediately with new batteries.
5. To remove the battery cover, remove the centrally located case mounting screw and replace batteries.
6. After battery check is completed, releasing MEAS button.

Insulation resistance measurements

1. Remove test tip and test lead from E,L terminals. (terminals open)
2. Depress MEAS button to turn on 500V on LED lamp, check the display resistance range is 20M Ω range or 2000M Ω range.If resistance is 20M Ω range, releasing MEAS button then press range button one time to selected 2000M Ω range.
3. Connect the test tip to the "L" terminal and the clip lead to the "E" terminal of the meter.
4. Connect the clip to one end of the circuit to be measured, and the test tip to the other end.
5. Depress the MEAS button. The 500V pilot LED lamp will light and the resistance value will be displayed in the meter. When display reading stable, releasing MEAS button, the meter will automatically hold the display reading then turns off automatically after 15 seconds.
6. For open circuits or values of resistance over 2000M Ω , the meter will treat the resistance value as infinite and display a "OL" only.

7. When measuring values of resistance below $20M\Omega$ on the $2000M\Omega$ range, measurement error is great. Releasing MEAS button then press range button one time to selected $20M\Omega$ range, re-depress the MEAS button.
8. When measuring values of resistance below $1M\Omega$ on any range. The 500V on LED will fail to light or light weakly.
This due to the large power consumed when measuring such small resistances.



PRECAUTIONS


E and L terminars

If one point of the circuit to be measured is connected to ground, connect that part of the circuit to the E side measurement lead. This is a safety measure. In general, however, either terminal of the meter may be used for the ground side connection.

When the 500V on LED is lighted, 500V is present between the E and L terminals. Please be caution when handing the instrument in this condition.

The Low battery alarm

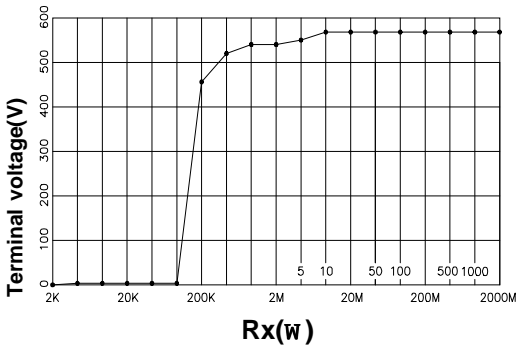
The battery alarm, the "" is displayed when measuring very low values of resistance (below 100K Ω). This due to the large power consumed when measuring such small resistances. When subsequent resistance measurements of high values result in the "" disappearing, the meter batteries should be assumed to be normal.

If the 500V on LED lights (weakly) but the "" LCD display lights, the batteries are near the end of their life and should be replaced immediately with new batteries.

Cleaning

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

Insulation Resistance Measurement Terminal Voltage



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 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.

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.

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 indemnify 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.

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. © Copyright 1999 OMEGA ENGINEERING, INC. All rights reserved. This document may not be copied, photocopied, reproduced, translated, or reduced to any electronic medium or machine-readable form, in whole or in part, without prior written consent of OMEGA ENGINEERING, INC.

Where Do I Find Everything I Need for Process Measurement and Control? OMEGA...Of Course!

HEATERS

- Heating Cable
- Cartridge & Strip Heaters
- Immersion & Band Heaters
- Flexible Heaters
- Laboratory Heaters

PRESSURE/STRAIN AND FORCE

- Transducers & Strain Gauges
- Load Cells & Pressure Gauges
- Displacement Transducers
- Instrumentation & Accessories

FLOW/LEVEL

- Rotameters, Gas Mass
Flowmeters & Flow Computers
- Air Velocity Indicators
- Turbine/Paddlewheel Systems
- Totalizers & Batch Controllers

TEMPERATURE

- Thermocouple, RTD & Thermistor
Probes, Connectors, Panels &
Assemblies
- Wire: Thermocouple, RTD &
Thermistor
- Calibrators & Ice Point References
- Recorders, Controllers & Process
Monitors
- Infrared Pyrometers

ENVIRONMENTAL MONITORING AND CONTROL

- Metering & Control Instrumentation
- Refractometers
- Pumps & Tubing
- Air, Soil & Water Monitors
- Industrial Water & Wastewater
Treatment
- pH, Conductivity & Dissolved
Oxygen Instruments

pH/CONDUCTIVITY

- pH Electrodes, Testers &
Accessories
- Benchtop/Laboratory Meters
- Controllers, Calibrators,
Simulators & Pumps
- Industrial pH & Conductivity
Equipment

DATA ACQUISITION

- Data Acquisition & Engineering
Software
- Communications-Based
Acquisition Systems
- Plug-in Cards for Apple, IBM
& Compatibles
- Datalogging Systems
- Recorders, Printers & Plotters

M-2888/0799