Dear Customer,

Thank you for choosing an Omega Engineering product. Please read this instruction manual carefully prior to use. This manual will provide you with the necessary information for correct use of the instrument.

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PRELIMINARY EXAMINATION

Remove the instrument from the packing material and examine it to make sure that no damage has occurred during shipping. If there is any damage, notify Omega Customer Service.

Each meter is supplied complete with:

- 3 x 1.5V AA alkaline batteries
- Instruction manual
- Beaded type K thermocouple

Note: Save all packing material until you are sure that the instrument functions correctly. All defective items must be returned in the original packing with the supplied accessories.

GENERAL DESCRIPTION

HH603A is a powerful and flexible thermometer which can take measurements using different types of thermocouple probes (K, J and T).

This meter has been designed using the latest microprocessor technology to provide reliable and accurate high resolution measurements in a wide temperature range.

Standard features include dual-level LCD (which allows continuous displaying of High and Low temperature values), °C/°F selection, HOLD function, auto-off capability, remaining battery life indication, low battery detection, and long battery life.
# SPECIFICATIONS OF HH603A

## SPECIFICATIONS

<table>
<thead>
<tr>
<th>Range (*)</th>
<th>K</th>
<th>-200.0 to 999.9°C / 1000 to 1371°F</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>J</td>
<td>-200.0 to 999.9°F / 1000 to 2500°F</td>
</tr>
<tr>
<td></td>
<td>T</td>
<td>-200.0 to 400.0°C</td>
</tr>
<tr>
<td>Resolution</td>
<td>K</td>
<td>0.1°C (-149.9 to 999.9°C)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.2°C (-200.0 to -150.0°C) / 1°C (1000 to 1371°C)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.1°F (-24.9 to 999.9°F) / 0.2°F (-249.9 to -25.0°F)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.3°F (-328.0 to -250.0°F) / 1°F (1000 to 2500°F)</td>
</tr>
<tr>
<td></td>
<td>J</td>
<td>0.1°C (-200.0 to 999.9°C)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.1°F (-149.9 to 999.9°F)</td>
</tr>
<tr>
<td></td>
<td>T</td>
<td>0.1°C (-149.9 to 400.0°C)</td>
</tr>
<tr>
<td>Accuracy</td>
<td>K</td>
<td>±0.5°C (-100.0 to 999.9°C) / ±1°C (outside)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>±1°F (-148.0 to 999.9°F) / ±1.5°F (outside)</td>
</tr>
<tr>
<td>Typical Emission Deviation</td>
<td>±3°C / ±6°F</td>
<td></td>
</tr>
<tr>
<td>Battery</td>
<td>3x1.5V AA (IEC LR6) batteries, approx. 500 hours of continuous use</td>
<td></td>
</tr>
<tr>
<td>Auto-off</td>
<td>user selectable: 60 min or disabled</td>
<td></td>
</tr>
<tr>
<td>Environment</td>
<td>-10 to 60°C (14 to 140°F), RH 100%</td>
<td></td>
</tr>
<tr>
<td>Dimensions</td>
<td>150 x 80 x 36 mm (5.9 x 3.1 x 1.4&quot;)</td>
<td></td>
</tr>
<tr>
<td>Weight</td>
<td>235 g (8.3 oz.)</td>
<td></td>
</tr>
</tbody>
</table>

(*) Range may be limited by probe.

## HH603A

**Keyboard Functions:**

- **ON/OFF**: turn the meter ON and OFF.
- **HOLD**: freeze the reading on display.
- **°C/°F**: change reading unit (°C or °F).
- **KJT**: select the thermocouple type.
- **CLR**: clear the HI and LO values.
OPERATIONAL GUIDE

To switch the instrument ON, press the ON/OFF key. The thermometer will carry out a self-diagnostic test routine, the LCD will show all segments for a few seconds (or as long as ON/OFF is held), followed by the percentage indication of the remaining battery life.

The thermometer then enters normal measurement mode. If a temperature probe is plugged in, the meter displays the measured temperature. If no probe is plugged in, or if the reading is over-range, the display shows flashing dashes. If a measurement is slightly over the range of the meter specifications, the display will flash the closest full-scale value.

To switch the meter OFF, press the ON/OFF key.

Note: The meters are provided with an acoustic signal feature activated when buttons are pressed, which can be disabled using a switch located in the battery compartment (see figure on page 8).

°C/°F SELECTION

Measurements can be displayed in either degrees Celsius or Fahrenheit. The meter is factory set to °C scale; to change the scale, press °C/°F key.

THERMOCOUPLE TYPE SELECTION, KJT

By pressing KJT, the thermometer is set according to the connected thermocouple type. The corresponding symbol will be displayed, i.e. K for K-type, J for J-type, T for T-type.

Note: Changing thermocouple type resets the HI and LO values.

HOLD FUNCTION

The HOLD function is activated by pressing the HOLD key. The measured temperature is held on the display until HOLD is pressed again. The “HOLD” tag blinks on the display while in HOLD mode.

Note: Although the display is frozen, internally the meter continues measuring and updating Hi/Lo, relative and average values.

HIGH/LOW TEMPERATURES

The maximum and minimum temperatures are continuously monitored and displayed on the lower portion of the LCD.

Note: When the reading goes over-range or the probe is removed, the Hi and Lo values display dashes until cleared.

CLEAR FUNCTION

Upon pressing the CLR key, the High/Low values may be cleared at any time during measurement and the current reading is assigned to the highest and lowest temperature values for the displayed channel only.

AUTO SHUT-OFF

To save battery life, the meters are provided with an auto-off feature, which switches the meter off after 60 minutes of inactivity. To disable this feature set the internal slide-switch located in the battery compartment.
BATTERY COMPARTMENT
See "Battery replacement" section for back cover removal/installation.

CLOCK 

CALIBRATION

All OMEGA Engineering thermometers have been accurately pre-calibrated at the factory; they are not field calibratable. However, it is recommended to have all thermometers recalibrated at least once a year.

For an accurate annual recalibration, contact OMEGA Customer Service Dept.
BATTERY REPLACEMENT

When the battery level is below 5%, a warning symbol will blink on the LCD to indicate a low battery condition.

If the battery level is low enough to cause erroneous readings, the Battery Error Prevention System (BEPS) turns the meter off. Immediately replace the batteries with new ones.

The batteries are accessed by separating the front and the back halves of the meter. Unscrew the 4 screws on the back of the meter and carefully replace the three batteries located in the battery compartment, while paying attention to their polarity. Reattach the back making sure that the gasket is in place and tighten the 4 screws to ensure a watertight seal.

Battery replacement must only take place in a non-hazardous area using 1.5V AA (IEC LR6) alkaline batteries.

Recommendations for Users

Before using these products, make sure that they are entirely suitable for the environment in which they are used.

Operations of these instruments in residential areas could cause unacceptable interferences to radio and TV equipment, requiring the operator to take all necessary steps to correct interferences.

Any variation introduced by the user to the supplied equipment may degrade the instruments’ EMC performance.

To avoid electrical shock, do not use these instruments when voltages of the measurement surface exceed 240AC or 60 VDC.

To avoid damages or burns, do not perform any measurement in microwave ovens.

Note: To clean the meters, do not use aggressive detergents. It is recommended to use water.

WARRANTY

OMEGA ENGINEERING, INC. warrants the unit to be free of defects in material and workmanship for a period of 13 months from date of purchase. OMEGA’s WARRANTY adds an additional one (1) month grace period to the second one (1) year product warranty to cover handling and shipping fees. This ensures that OMEGA’s customers receive maximum coverage on the product.

If the unit malfunctions, it must be returned to the factory for evaluation. OMEGA’s Customer Service Department will issue an Authorized Return (AR) number prior to open return on 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 acts of the Purchaser, including but not limited to mishandling, improper interfacing, operation outside of design limits, improper repair, or unauthorized modifications. This WARRANTY is void if the unit shows evidence of having been tampered with or shows evidence of having been damaged as a result of excessive corrosive; operator; heat, moisture or vibration; improper specifications; reconfiguration; misuse or other operating conditions outside of OMEGA’s control. Components which were not warranted, including but not limited to contact points, fuses, and Yokogawa.

OMEGA is pleased to offer suggestions on the use of its various products.

However, OMEGA neither assumes responsibility for any errors or omissions nor assumes liability for any damages that result from the use of some of its products in accordance with information provided by OMEGA, either verbal or written. OMEGA warrants only that the products manufactured by it will be as specified and free of defects. OMEGA MAKES NO OTHER WARRANTIES OR REPRESENTATIONS OF ANY KIND WHATSOEVER, EXPRESS OR IMPLIED, EXCEPT AS 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 the 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. To the extent OMEGA is liable for consequential, incidental or special damages.

CONDITIONS: Equipment sold by OMEGA is not intended to be used, but shall be used: (1) as a “Basic Component” under 21CFR 211.62, 121 or with any subcomponent instructions or advice, or (2) in medical applications or used as human. Should any Product(s) be used to a Medical application or used as human, this manual must be in use, as minimal in any way. OMEGA assumes no responsibility to be used or for such hazards. WARRANTY DISCLAIMER language in this manual provides the sole warranties for the Product(s), in such a manner.

RETURN REQUESTS/INQUIRIES

Direct all warranty and repair requests/Inquiries to OMEGA Engineering, Inc. Customer Service Department. Before returning any products to OMEGA, PURCHASER MUST OBTAIN AN AUTHORIZED RETURN (AR) NUMBER FROM OMEGA’S CUSTOMER SERVICE DEPARTMENT (IN ORDER TO AVOID PROCESSING DELAYS). This assigned AR number should be noted on the outside of the return package and in any correspondence. The returner is responsible for shipping charges, freight, insurance and proper packaging to prevent breakage in transit.

FOR WARRANTIES REQUESTS, please follow the following information available before contacting OMEGA

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

FOR NON-WARRANTY REQUESTS, contact OMEGA for current repair charges. Have the following information available before contacting OMEGA:

1. Purchase Order number to cover the COST of the repair,
2. Model and serial number of the product, and
3. Repair instructions and/or specific problem relative to the product.

OMEGA policy is to make returns changes, not model changes, whenever an improvement is possible. This affects our customers the latest in technology and engineering.

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- Laboratory Heaters

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- pH, Conductivity & Dissolved Oxygen Instruments