



OMEGA[®] On-Line Service Internet e-mail
www.omega.com info@omega.com

Servicing North America:

USA: One Omega Drive, Box 4047
Summit, CT 06897-0047 FAX: (203)359-7700
Tel: (203) 359-1660
e-mail: info@omega.com

Canada: 976 Berger
Laval (Quebec) H7L5A1, Canada
Tel: (514) 856-6928 FAX: (514) 856-8886
e-mail: info@omega.ca

For immediate technical or application assistance:

USA Sales Service: 1-800-826-6342 / 1-800-TC-OMEGA
Customer Service: 1-800-622-2276 / 1-800-622-BEST
Engineering Service: 1-800-872-9436 / 1-800-USA-HELP
TELEX: 99404 EASTLINK, CABLE: OMEGA

Mexico: En Español: (301) 203 359-7803
E-mail: espanol@omega.com
Fax: (301) 203 359-7807 info@omega.mx

Servicing Europe:

Benelux: Postbus 8034, 1180 LA Amsterdam, The Netherlands
Tel: (31) 20 6418403 FAX: (31) 20 6434643
Toll Free in Benelux: 06 0993344
e-mail: sales@omeng.nl

Czech Republic: Pyskova 184, 733 01 Karvina, Czech Republic
Tel: +420 (0)59 6311899 FAX: +420 (0)59 6311114
Toll Free: 0800-1-66542 e-mail: info@omeng.cz

France: 11, rue Jacques Currier, 78280 Guyancourt, France
Tel: +33 (0)1 61 37 29000 FAX: +33 (0)1 30 57 5427
Toll Free France: 0800 466 342
e-mail: sales@omeng.fr

Germany/Austria: Daimlerstrasse 26, D-75392 Deckelframm, Germany
Tel: +49 (0)7056 9398-0 FAX: +49 (0)7056 9398-29
Toll Free in Germany: 0800 639 7678
e-mail: info@omeng.de

United Kingdom: One Omega Drive Riverhead Technology Centre
Northbrook, Jaram, Manufacturer,
M44 5BD United Kingdom
ISO 9002 Tel: +44 (0)161 777 6611 FAX: +44 (0)161 777 6622
e-mail: sales@omeng.co.uk

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, human applications.

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'S WARRANTY adds an additional (1) month grace period to the normal one (1) year product warranty to cover handling and shipping time. This assurance that OMEGA's customers receive maximum coverage on each product.

If the unit is not in operation, it must be returned to the factory for repair. OMEGA (EASA) customer Service Department will issue an Authorization Repair Order (ARO) for the unit. The unit 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 of other operating conditions outside of OMEGA's control. Components which wear are not warranted, including but not limited to contact points, fuses, and filaments.

OMEGA is pleased to offer suggestions on the use of its various products. However, OMEGA neither assumes responsibility for any conditions 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 WITHIN THE LIMITED 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 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 shipping and repair requests/inquiries to the OMEGA 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). 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 damage in transit.

FOR WARRANTY RETURNS: | FOR NON-WARRANTY REPAIRS:

- | | |
|---|---|
| <ul style="list-style-type: none"> 1. Please have the following information available BEFORE contacting OMEGA: <ul style="list-style-type: none"> 1. PO number under which the product was PURCHASED. 2. Model and serial number of the product. 3. Exact instructions and/or specific problems relative to the product. | <ul style="list-style-type: none"> 1. consult OMEGA for current repair charges. Have the following information available BEFORE contacting OMEGA: <ul style="list-style-type: none"> 1. PO number to cover the COST of repair. 2. Model and serial number of the product and 3. Exact 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 allows 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, 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!
Shop online at www.omega.com

TEMPERATURE

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

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
- Transmitters & Batch Controllers

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

HEATERS

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

ENVIRONMENTAL MONITORING AND CONTROL

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

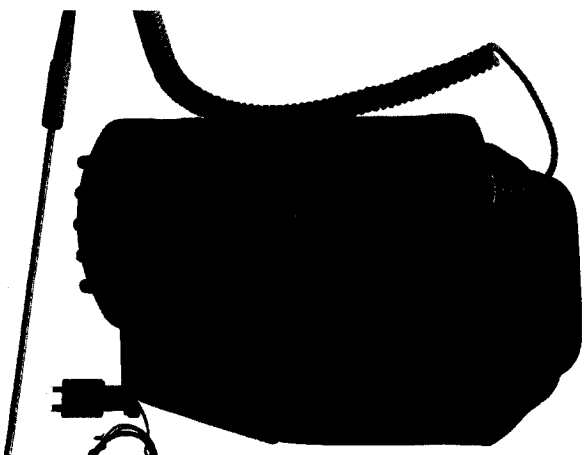


User's Guide

Shop online at



www.omega.com
e-mail: info@omega.com



HH501AJK
Digital Thermometer

INTRODUCTION

This instrument is a portable 3½ digit, compact-sized digital thermometer designed to use external K-type and J-type thermocouple as temperature sensor. It also has the feature that sensor offset can be adjusted for in the field.

An SMP type connector is provide in the top of the unit to plug in the thermocouple.

SAFETY INFORMATION

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

WARNING

To avoid electrical shock, do not use this instrument when voltages at the measurement surface exceed 24V AC or DC.

WARNING

To avoid damage or burns, do not make temperature measurement in microwave ovens.

CAUTION

Repeated sharp flexing can break the thermocouple leads. To prolong lead life, avoid sharp bends in the leads, especially near the connector.

Packing List

1. HH501A/K handheld thermometer with protective boot.
2. Teflon insulated beaded wire thermocouple.
3. 9 volt battery.

SPECIFICATIONS

ELECTRICAL

Temperature Scale:

Celsius or Fahrenheit user-selectable.

Measurement Range:

K-Type -100°C to 1372°C, (-150°F to 1999°F)
J-Type -100°C to 1200°C, (-150°F to 1999°F)

Resolution: 1 degree or 0.1 degree form -59.9 to 199.9 degree C or F (autorangeing).

Accuracy: Accuracy is specified for operating temperatures over the range of 18°C to 28°C (64°F to 82°F), for 1 Year, not including thermocouple error.

±(0.1% rdg + 1°C) on °C
±(0.1% rdg + 2°F) on °F

Temperature Coefficient: 0.1 times the applicable accuracy specification per °C from 0°C to 18°C and 28°C to 50°C (32°F to 64°F and 82°F to 122°F).

Input Protection: 24V dc or 24V ac rms maximum input voltage on any combination of input pins.

Reading Rate: 2.5 times per second.

Input Connector: Accepts standard miniature thermocouple connectors (flatblades spaced 7.9mm, center to center), (SMP type)

ENVIRONMENTAL

Ambient Operating Ranges:

0°C to 50°C (32°F to 122°F) <80% R.H.
Storage Temperature:
-20°C to 60°C (4°F to 140°F) <70% R.H.

GENERAL

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

Overload: "OL" is displayed.

Battery: Standard 9V battery (NEDA 1604, IEC 6F22 006P).

Battery Life: 200 hours typical with carbon zinc battery.

Auto Power Off: Approximately 20 minutes.

Dimensions: 192mm(H) x 91mm(W) x 52.5mm(D).

Weight: 365g.

Supplied Wire: 3 feet type "K" beaded wire thermocouple teflon insulated. Maximum insulation temperature 200°C (392°F). Wire accuracy ±2.2°C or ±0.75% of reading (whichever is greater) from 0°C to 800°C.

OPERATING INSTRUCTIONS

Power Button

Press the "⏻" button to turn on or off thermometer.

°C/°F Selecting the Temperature Scale

Readings are displayed in either degrees Celsius(°C) or degrees Fahrenheit(°F).

When the thermometer is turned on, it is set to the temperature scale that was in use when the thermometer was last turned off.

To change the temperature scale, press the "°C/°F" button.

✳️ Button (Display Back-Light)

Pressing the "✳️" button to trigger on the Back-Light.

Pressing the "✳️" button again to make the Back-Light lighter and press "✳️" button once more to cancel the Back-Light function.
Back-Light on → lighter → Back-Light off

HOLD Button

Press the "HOLD" button to enter the Data Hold mode, the "HOLD" annunciator is displayed at the higher-center of display.

When HOLD mode is selected, the thermometer held the present readings and stops all further measurements.

Press the "HOLD" button again cancels HOLD mode, causing thermometer to resume taking measurements.

TYPE Button (APO)

Press "TYPE" button to select the type of T/C, thermocouple "K" or "J". Make sure the proper type has been selected.

Press and hold down "APO" button for 2 seconds to trigger on or off APO (Automatic Power Off) mode, and then APO annunciator will appear or disappear on the display.

Power is automatically turn off, if no operation for a period of time, and "APO" annunciator is displayed at upper-left corner when APO function is enabled.

MIN MAX Button

Press "MIN MAX" button to enter the MIN MAX recording mode (displays the Maximum reading, Minimum reading, "MAX-MIN" reading stored in record mode)

Press "MIN MAX" button to cycle through the MAX, MIN, MAX-MIN readings. In this mode, press "HOLD" button to stop recording, all values are frozen, press again to restart recording.

In this mode, the APO function and other buttons are disabled, excluding "HOLD" and "✳️" buttons.

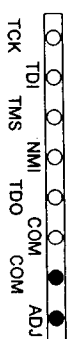
To prevent accidental loss of MAX, MIN and MAX-MIN, in this mode can only be cancelled by pressing and holding down the "MIN MAX" button for 2 seconds to exit and erased recorded reading.

ADJUST THERMOCOUPLE OFFSET

1. Insert the thermocouple into a known temperature (T) until the display equal to known temperature (T)
exp: ice point at 0°C
boiling water at 100°C
2. Press "▲" or "▼" to add or subtract the value.
3. It can be adjusted ±6°F(±3°C) of default. If you can't adjust your T/C, please check your T/C or send the meter to be calibrated.
4. Press "ENTER" button to confirm.

PROCEDURE OF CALIBRATION

1. It will not enter into calibration procedure at LOWBAT condition.
2. Make COM & ADJ pin short and then turn on the meter.



The procedure as follow:

- Supply 35°C (K type) from calibrator and LCD displayed nearly 35°C → press backlit button → LCD displayed "00.1" → press backlit button → supply 1300°C (K-type) from calibrator and LCD displayed nearly 1300°C → press backlit button → OFF automatically(calibration is completed)
3. Take off the short pin when the calibration is completed then temperature measurement is workable.

OPERATOR MAINTENANCE

WARNING

To avoid possible electrical shock, disconnect the thermocouple connectors from the thermometer before removing the cover.

Battery Replacement

1. Power is supplied by a 9 volt "transistor" battery, (NEDA 1604, IEC 6F22)
2. The "E3" appears on the LCD display when replacement is needed. To replace battery remove screw from back of meter and lift off the battery cover.
3. Remove the battery from battery contacts and replace.
4. When not use for long time remove battery.
5. Do not store in a place with high Temp. or high humidity.

Cleaning

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