The HH506RA is a portable digital thermometer that measures external thermocouples of type K, J, R, S, T, E, and N thermometer features a dual thermocouple input, an adjustable T/C offset and an RS-232 interface for uploading data to a PC using optional software and cable.

**General**

- **Temperature Range:** From -20°C to 60°C (-4°F to 140°F) <70% R.H.
- **Storage Temperature:** 0°C to 50°C (32°F to 122°F) <80% R.H.
- **Battery:** Standard 9V battery (NEDA 1604, IEC 6F22 006P)
- **Battery Life:** About 100 hours when used with a carbon zinc battery.
- **Dimensions:** 192 mm (H) x 91 mm (W) x 52.5 mm (D)
- **Weight:** 110 grams
- **Ambient Operating Temperature:** -20°C to 28°C (32°F to 82°F)
- **Accuracy:** 
  - K/J/T/E-Type: ±0.1 °C or ±0.5% of Full Scale (whichever is greater)
  - N-Type: ±0.1 °C or ±0.75% of Full Scale (whichever is greater)
- **Display:** 4 1/2 digit liquid crystal display (LCD) with maximum reading of 19999.
- **Input Protections:** Input must be within the specified range. For lead lengths and connectors, consult the connection guide.

**Electrical Specifications**

- **Input:** Measures: 32°F to 79°F (0°C to 26°C)
- **Input Protections:** Input must be within the specified range. For lead lengths and connectors, consult the connection guide.
- **Input Impedance:** Measured at the thermocouple input terminals.
- **Input Accuracy:** ±0.1 °C or ±0.5% of Full Scale (whichever is greater).
- **Input Protection:** Input must be within the specified range. For lead lengths and connectors, consult the connection guide.

**Usage Information**

- **Display:** The display shows the current measurement.
- **Input:** Measures the temperature input.
- **Input Protections:** Input must be within the specified range. For lead lengths and connectors, consult the connection guide.
- **Input Impedance:** Measured at the thermocouple input terminals.
- **Input Accuracy:** ±0.1 °C or ±0.5% of Full Scale (whichever is greater).
- **Input Protection:** Input must be within the specified range. For lead lengths and connectors, consult the connection guide.

**Environmental Specifications**

- **Humidity:** 30% to 90% relative humidity non-condensing.
- **Operating Temperature:** -20°C to 50°C (32°F to 122°F)
- **Storage Temperature:** -20°C to 70°C (-4°F to 158°F)

**Safety Information**

- **Warning:** These products are not designed for use in, and should not be used for, human applications.
- **Caution:** To avoid electrical shock, do not use the device when working voltages at the measurement surface are over 24V AC or DC.
- **Warning:** Do not take temperature measurements in microwave ovens.
- **Warning:** Do not use the device in flammable environments.

**Technical Support**

- **Customer Service:** 1-800-622-2378/1-800-622-BEST®
- **Sales Service:** 1-800-826-6342/1-800-TC-OMEGA®
- **Engineering Service:** 1-800-872-9436/1-800-USA-WHEN®

**Specifications**

- **Ranges:**
  - K/J/T/E-Type: 32°F to 3212°F
  - S-Type: 0°F to 1767°F
  - R-Type: 0°F to 482°F
  - N-Type: -50°C to 1300°C
- **Accuracy:**
  - K/J/T/E-Type: ±0.1 °C or ±0.5% of Full Scale (whichever is greater)
  - S-Type: ±0.1 °C or ±0.5% of Full Scale (whichever is greater)
  - R-Type: ±0.1 °C or ±0.5% of Full Scale (whichever is greater)
  - N-Type: ±0.1 °C or ±0.75% of Full Scale (whichever is greater)
- **Input:**
  - Measured at the thermocouple input terminals.
  - Input Protections:
    - Input must be within the specified range.
    - Input Impedance:
      - Measured at the thermocouple input terminals.
      - Input Accuracy:
        - ±0.1 °C or ±0.5% of Full Scale (whichever is greater)
      - Input Protection:
        - Input must be within the specified range.

**Notes:**

- The information contained in this document is believed to be correct, but OMEGA accepts no liability for any errors it contains, and reserves the right to alter specifications without notice.
- It is the policy of OMEGA Engineering, Inc. to comply with all applicable regulations and standards. The HH506RA is a portable thermometer equipped with a dual thermocouple input, an adjustable T/C offset, and an RS-232 interface for uploading data to a PC using optional software and cable.
- To avoid damage or burns, do not take temperature measurements in microwave ovens.
- To avoid electrical shock, do not use the device when working voltages at the measurement surface are over 24V AC or DC.
OPERATING INSTRUCTIONS

SHIFT MODE

The T1-T2/TIME button on the third display panel allows the user to record the data and groups. Press the T1-T2 button to switch the display options. When meter is turned on, it is set to the display that was last in use. The hold function can only be activated in the shift mode. The hold function will stop the recording and measurements automatically resume measurements. To deactivate the data hold mode, press the hold button again cancels the function, and the instrument will automatically use the next group to store the following data. The log function can be activated in the shift mode. Press the LOG button again to exit the data log function. The build in memory can store up to 128 data. The data can be read using the read function in the normal mode. The save function stores the T1, T2 data in nonvolatile memory. Press the save button to save the current data.

SA VE button

HOLD button

MIN/MAX function

REL button

C/F button

APO button

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PROCEDURE OF CALIBRATION

To develop the calibration function for the instrument by passing the EC signal from an external source to the input terminals of the instrument, the following steps must be performed:

1. Connect the external source to the instrument input terminals.
2. Adjust the external source to produce the desired range of EC signals.
3. Record the instrument readings for each EC signal produced.
4. Repeat steps 1-3 for different ranges of EC signals.
5. Plot the recorded readings against the EC signals.
6. Develop the calibration function by fitting a curve to the plotted data.
7. Use the calibration function to correct the instrument readings for any errors.

WARNING

This procedure must be performed by qualified personnel.

OPMATION MAINTENANCE

To perform the maintenance of the instrument, the following steps must be performed:

1. Disconnect the instrument from the power source.
2. Remove the instrument from the enclosure.
3. Clean the instrument using a soft cloth.
4. Inspect the instrument for any damage.
5. Replace any damaged components.
6. Reassemble the instrument.
7. Test the instrument using a calibrated source.
8. Reconnect the instrument to the power source.

CUSTOMER SERVICE DEPARTMENT (IN ORDER TO AVOID UNWANTED résultat, please provide the following information available BEFORE contacting customer service:

1. Model and serial number of the instrument.
2. Description of the problem.
3. Date of purchase.
4. Calibration date.
5. Manufacturer's warranty information.

FOR SPECIFIC PROBLEMS RELATIVE TO THE PRODUCT, CONTACT THE MANUFACTURER'S CUSTOMER SERVICE DEPARTMENT.

WARRANTY/DISCLAIMER

OMEGA ENGINEERING, INC. warrants this unit to be free of defects in materials and workmanship for a period of one year from the date of purchase.

OMEGA MAKES NO OTHER WARRANTIES OR REPRESENTATIONS OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

LIMITATION OF LIABILITY: The purchaser is responsible for all costs of repair, replacement, and shipping in connection with the warranty.

OMEGA MAKES NO OTHER WARRANTIES OR REPRESENTATIONS OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.