

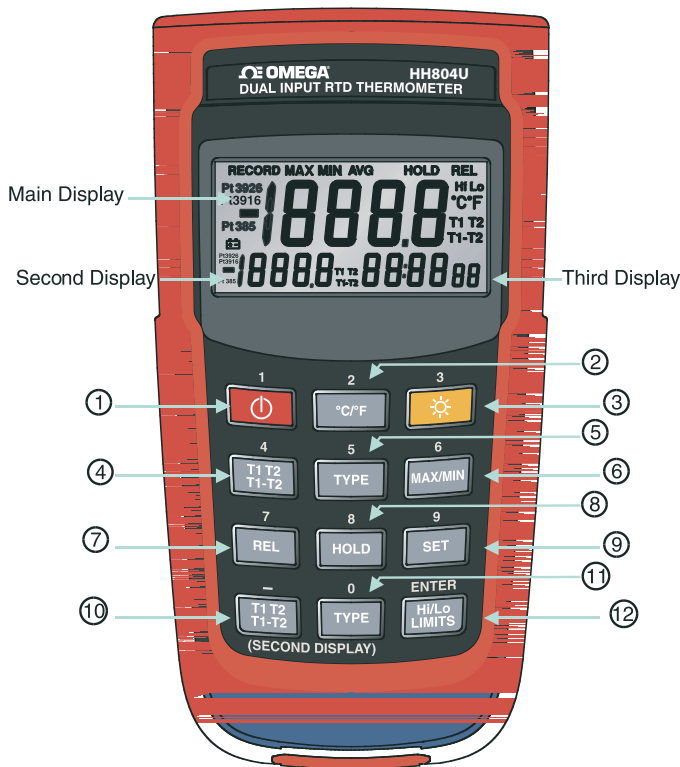


## OPERATING INSTRUCTIONS

### HH804U

### DUAL INPUT RTD THERMOMETER

**1 YEAR**  
WARRANTY



MADE IN TAIWAN

## INTRODUCTION

This instrument is a 4\_ digit, compact-sized portable digital thermometer designed to use external 100\_ Platinum RTD as temperature sensor. Temperature indication follows Reference Temperature/Resistance Tables (Pt385 for European Curve, Alpha=.00385. Pt3926 for American Curve, Alpha=.003926. Pt3916 for Japan Curve, Alpha=.003916.)

## 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 working voltages at the measurement surface over 24V AC or DC.

### WARNING

To avoid damage or burns, do not take temperature measurements in microwave ovens.

## ENVIRONMENTAL

### Ambient Operating Ranges:

0°C to 50°C (32°F to 122°F) <70% R.H.

### Storage Temperature:

-20°C to 60°C (-4°F to 140°F) <80% R.H.

## GENERAL

### Display:

4\_ digit liquid crystal display (LCD) with maximum reading of 19999  
**Overload:** "----" or "OL" is display.

### Battery:

1.5V x 4 PCS (SIZE AAA) R03P.

### Battery Life:

200 hours typical with carbon zinc battery

**Auto power off:** 30 minutes

### Dimensions:

160mm(H) x83mm(W) x 38mm(D)

**Weight:** Approx. 255g including batteries.

## SPECIFICATIONS

### ELECTRICAL

**Temperature Scale:** Celsius or Fahrenheit user-selectable

### Measurement Range:

Pt385(100\_) -200°C to 800°C, (-328°F to 1472°F)

Pt3916/Pt3926(100\_) -200°C to 630°C, (-328°F to 1166°F)

**Resolution:** 0.1°C or 0.2°F

### 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 RTD probe error.

±(0.05% rdg + 0.2°C) on °C scale

±(0.05% rdg + 0.4°F) on °F scale

### 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.

**Maximum Differential Common Mode Voltage (Maximum Voltage between T1 and T2 during measurement):** 1volt.

**Reading Rate:** 1sample/second.

### Input Connector:

Accepts 4 pin mini-DIN connectors.

## OPERATING INSTRUCTIONS

### 1. Power Button

The button turns the thermometer on or off. In the SET mode the unit cannot be powered off. Exit the SET mode to power off.

### APO function mode

Press power button for more than 6 seconds to disable auto power function. The display will show "APO OFF".

### 2. °C/°F Selecting the Temperature Scale (Main display)

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 key.

### 3. "☀" Display Back-Light

Press the "☀" key to turn on or turn off the back light.

### 4. T1 T2/T1-T2 Main display Input Selection

The input selection button determines which input is shown on the display; T1 ,T2 or the difference between the two probes (T1-T2). When thermometer is turned on, it is set to T1.

### 5. TYPE(Pt385/Pt3926/Pt3916) Input RTD Probe Select (Main display)

The TYPE button selects the RTD curve to use for the input currently shown. When the thermometer is turned on, it is set to the curve that selected when the thermometer was last turned off.

### 6. MIN MAX with Time record Mode (only Main display)

Press MIN MAX key to enter the MIN MAX Recording mode, (displays Maximum reading with time, Minimum reading with time and Average reading stored in recording mode). In the this mode the automatic power-off feature is disabled and key, °C/°F key, REL key, SET key, Hi/Lo Li key and main display T1 T2 T1- T2 key, TYPE key are disabled. beeper emits a tone when a new minimum or maximum value is recorded. Push MIN MAX key to cycle through the MAX, MIN and AVG readings. If an overload is recorded, the averaging function is Stopped. In the mode, press HOLD key to stop the recording of readings, all values are zen, press again to restart recording. To prevent accidental loss of MAX and AVG data, in this mode can only be cancelled by pressing hold down the MIN MAX key for 2 seconds to exit and erased recorded readings.

### 7. REL Relative mode (only Main display)

Press REL key to enter the Relative mode, zero the display, and store displayed Reading as a reference value and annunciator REL is displayed. Press REL key again to exit the relative mode. The relative value can be entered by the user. (See "SET mode" later in this manual.) When the sired Relative value has been entered, press REL key to enter the Relative mode, press SET key use set Relative value as a reference value. Press key again to exit the relative mode. In the Relative mode, the value (can >±1999.9 counts) shown on the LCD is always the difference between stored reference and the present reading.

### 8. HOLD Mode (only Main display)

Press the HOLD key to enter the Data Hold mode, the "HOLD" annunciator is displayed. When HOLD mode is selected, the thermometer held the sent readings and stops all further measurements. Press the HOLD again to cancel HOLD mode causing thermometer to resume taking urents. In the MIN/MAX recording mode, press HOLD key to stop the cording. Press HOLD key again to resume recording. (Previously recorded read are not erased).

### 9. SET mode (Relative value set, Time set and Hi/Lo Limits value set)

**9.1** Press SET key to enter Relative values SET mode (Press ENTER key escape relative values set mode), REL set mode. = = = = is displayed main display. Relative value is entered via overlay numbers, then

Time set mode. (Press ENTER key can escape Time set mode) =.= =. = : = is displayed in second and third display. Time (hours, minutes, seconds) value is entered via overlay numbers, then press overlay ENTER key. Time start from set time value, enter Hi/Lo Limits value set mode.

Hi Limit value set mode, (Press ENTER key can escape Hi Limit value set mode), =. = = =. = is displayed in main display, Hi Limit value is entered via overlay numbers, then press overlay ENTER key, stored the Hi Limit value, enter Lo Limit value set mode (Press ENTER key can escape Lo Limit value set mode). =. = = =. = is displayed in main display, Lo Limit value is entered via overlay numbers, then press overlay ENTER key, stored the Lo Limit value and exit SET mode.

When the thermometer is turned on. The Relative set value and Hi/Lo Limits set value that was in use when thermometer was last turned off set values.

### T1/T2 T1-T2 second display Input Selection

The input selection button determines which input is shown on the second display; T1 ,T2 or the difference between the two probes (T1-T2). When the thermometer is turned on, it is set to T2.

### TYPE(Pt385/Pt3926/Pt3916) Input RTD Probe select (second display)

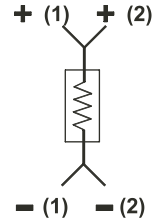
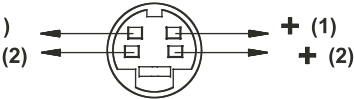
The TYPE button selects the RTD curve to use for the input currently shown. When the thermometer is turned on, it is set to the curve that was selected when the thermometer was last turned off.

### Hi/Lo Limits mode (only Main display)

Press the Hi/Lo Limits button to enter the Hi/Lo Limits comparative mode, when the input temperature exceeds the Hi or Lo Limits value, the beeper emits a continuous pulse tone. Press the Hi/Lo Limits button again to exit Hi/Lo Limits mode.

## RTD PROBE CONNECTION

P/N: 14061-0800-9  
MINI DIN PLUG



### TEMPERATURE VS RESISTANCE TABLE(ITS90)

°C	Pt385	Pt3926	Pt3916
-200°C	18.521_	16.996_	17.057_
-100°C	60.256_	59.479_	59.565_
0°C	100.000_	100.000_	100.000_
100°C	138.505_	139.272_	139.171_
200°C	175.856_	177.362_	177.155_
300°C	212.052_	214.275_	213.957_
400°C	247.092_	250.018_	249.584_
500°C	280.977_	284.591_	284.036_
600°C	313.708_	317.994_	317.313_
700°C	345.280_	-	-
800°C	375.700_	-	-

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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. **WARNING:** These products are not designed for use in, and should not be used for, human applications.

## WARNING

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

### Battery Replacement

- Power is supplied by 4pcs 1.5V (SIZE AAA) R03P.
- The "BATT" appears on the LCD display when replacement is needed. To replace battery remove screw from back of meter and lift off the battery cover.
- Remove the battery from battery contacts and replace.
- When not in use for long periods the batteries should be removed.
- Do not store in locations with high temperatures, or high humidity.

### Cleaning

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



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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:

- Purchase Order number under which the product was PURCHASED,
- Model and serial number of the product under warranty, and
- 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:

- Purchase Order number to cover the COST of the repair,
- Model and serial number of the product, and
- 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.

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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 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 having been 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 in which wear is not warranted, include but are not limited to contact points, fuses, and triacs.

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

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- Load Cells & Pressure Gages
- Displacement Transducers
- Instrumentation & Accessories

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- Air Velocity Indicators
- Turbine/Paddlewheel Systems
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- Controllers, Calibrators, Simulators & Pumps
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### DATA ACQUISITION

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- Plug-in Cards for Apple, IBM & Compatibles
- Datalogging Systems
- Recorders, Printers & Plotters

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- Cartridge & Strip Heaters
- Immersion & Band Heaters
- Flexible Heaters
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- Industrial Water & Wastewater Treatment
- pH, Conductivity & Dissolved Oxygen Instruments