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WARRANTY



User's Guide



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MADE IN TAIWAN

HH66U

Thermometer

K/J/T/E/R/S/N Types



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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.

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

■ Introduction

Thank you for purchasing HH66U from Omega. Please take a few minutes to browse through this user manual before you begin to operate the unit to ensure that you are fully familiarized with how best to operate the meter as accurately and safely as possible. The HH66U is a microprocessor digital temperature meter.

Model	Input Mode	USB	Thermocouple Type
HH66U	Dual Input	Yes	K,J,T,E,R,S,N

■ Features

1. Five-digit liquid crystal display.
2. High resolution quick response.
3. Full range 0.1 resolution.
4. Setting alert temperature range.
5. With T1/T2 switchover independent display
6. With T1/T2 simultaneously display function.
7. Setting power source for "Auto Power Off " or " Never Auto Power Off ".
8. The thermocouple types can be independent under T1 and T2 temperature settings for testing simultaneously different types of thermocouple.
9. Low battery indicator prompted via a "🔋" icon.
10. USB interface for Windows compatible software, with setting transmission timing set at min. of 1 second and max. up to 59 minutes and 59 seconds.
11. With built-in "Time" function.
12. Additional features include: Maximum(Max) Minimum(Min).readout hold(Hold).relative (REL). And T1-T2.
13. Temperature readout modes include Celsius (°C), Fahrenheit(°F), absolute temperature(K).
14. A lightweight compact unit featuring a full range of comprehensive functions that can be easily maneuvered in one hand.
15. CE certified, according to ITS-90.

■ General Specifications


1. Display Mode: Five-digit liquid crystal display.
2. Polarity indicator: No indicator is shown when readouts are in the positive value, while the symbol "-" is prompted when readouts fall into the negative value.
3. Overload indicator: The overload "OL" indicator.
4. Low-battery indicator: The symbol "🔋" is prompted on the LCD when the battery runs low.
5. Power : DC-9 volt battery x 1 pcs.
6. Auto power off: If there is no operation in 20 minutes, the battery power will be turned off. Press the "Hold" key for 3 seconds, the auto power off will be canceled.
7. Battery life: Approximately 200 hours.
8. Operating Temperature and Humidity: 0°C~50°C (32°F~122°F), 0~80%RH.
9. Storage Temperature and Humidity: -10°C~60°C (14°F~140°F), 0~80%RH.
10. Dimension: 130x56x38mm(LxWxH).
11. Weight: Approximately 180g.
12. Accessories:
 - (A) DC-9V battery x 1 pcs.
 - (B) Carrying-case x 1 pcs.
 - (C) Two K-type thermocouples
 - (D) USB cable x 1 pcs
 - (E) Software CD x 1 pcs
 - (F) Users manual

■ Electrical Specifications

1. Temperature unit: Celsius temperature($^{\circ}\text{C}$)
Fahrenheit temperature($^{\circ}\text{F}$)
Absolute temperature (K).
2. Measurement Range:(At $23 \pm 5^{\circ}\text{C}$.Relative humidity $< 80\% \text{RH}$)
K-type: $-200^{\circ}\text{C} \sim 1372^{\circ}\text{C}$ ($-328^{\circ}\text{F} \sim 2501^{\circ}\text{F}$)
J-type: $-210^{\circ}\text{C} \sim 1200^{\circ}\text{C}$ ($-346^{\circ}\text{F} \sim 2192^{\circ}\text{F}$)
T-type: $-250^{\circ}\text{C} \sim 400^{\circ}\text{C}$ ($-418^{\circ}\text{F} \sim 752^{\circ}\text{F}$)
E-type: $-210^{\circ}\text{C} \sim 1000^{\circ}\text{C}$ ($-346^{\circ}\text{F} \sim 1832^{\circ}\text{F}$)
R&S-type: $0^{\circ}\text{C} \sim 1767^{\circ}\text{C}$ ($32^{\circ}\text{F} \sim 3212^{\circ}\text{F}$)
N-type: $-150^{\circ}\text{C} \sim 1300^{\circ}\text{C}$ ($-238^{\circ}\text{F} \sim 2372^{\circ}\text{F}$)
3. Resolution: 0.1
4. Accuracy: The basic accuracy does not include the error of the thermocouple.
K/J/T/E/N-type:
 $\pm(0.05\% \text{ reading} + 0.7^{\circ}\text{C})$ $-250^{\circ}\text{C} \sim -100^{\circ}\text{C}$
 $\pm(0.05\% \text{ reading} + 0.5^{\circ}\text{C})$ $-100^{\circ}\text{C} \sim 1372^{\circ}\text{C}$
 $\pm(0.05\% \text{ reading} + 1.4^{\circ}\text{F})$ $-418^{\circ}\text{F} \sim -148^{\circ}\text{F}$
 $\pm(0.05\% \text{ reading} + 1.0^{\circ}\text{F})$ $-148^{\circ}\text{F} \sim 2501^{\circ}\text{F}$

R/S-type:
 $\pm(0.05\% \text{ reading} + 2^{\circ}\text{C})$ $0^{\circ}\text{C} \sim 1767^{\circ}\text{C}$
 $\pm(0.05\% \text{ reading} + 4^{\circ}\text{F})$ $32^{\circ}\text{F} \sim 3212^{\circ}\text{F}$

■ Operation

1.  : Power On/Off switch:
Press the power button to turn the thermometer ON or OFF, however, when USB function is used the power will always be on until the USB function is ended. (press once the "Shift" button then push the "Time" key, as the "RS232" word will disappear on the LCD) the power will be turned off
2. °C/°F/ K: The temperature unit selection key.
Press the key to sequentially alternate the three temperature units of °C, °F and K
3. Hold: The readout hold function key.
Press the "Hold" key, and a "Hold" icon will display on the LCD and the readout held in; press the "Hold" button once more to cancel the readout "Hold" function.
For auto power off control, press the "Hold" key for three seconds, and "p-off" icon will disappear on the LCD to undo the auto power off. Press the "Hold" key for three seconds, and "p-off" icon will appear on the LCD to reactivate the auto power off function.
4. Max/Min: The maximum/minimum readout function key.
Press the "Max/Min" key and "Max" icon will appear on the upper of the LCD, and press the key once more to switch to "Min" setting; press the key once more to disable the "Max/Min" function.

■ Operation

5. Time: The time setting function key

Press the "Time" key and the time meter "00:00" will appear on the LCD display indicating that the timer has been activated, where the timer runs up to 100 hours, and will reset upon reaching 100 hours; to reset the timer; press the "Time" key once more, the screen will revert back to normal

6. Shift: The function key setting will become "REL". "Limit". "PC" and "T1-T2".

7. REL: The relative readouts.

Press the "Shift" key, then press the "Hold" key and the "REL" icon will appear on the LCD to access the "REL" feature.

Upon accessing the REL function, the original temperature will display 0, and be saved to the original temperature value to make a standard relative value. Whenever the input temperature shifts, the LCD will show the minus value of original temperature value and input temperature. Value.

For example, an original value of 25.0 is entered and the device is set to REL function, where the LCD will become 0 and save the 25.0 taken as the standard relative value, when displaying an input temperature of 30.0, the LCD will show 30 minus 25 equals to 5. To exit from the REL function, press the "Shift" key once, then press the "Hold" key to complete.

■ Operation

8. Limit: Alert temperature range key

Press the "Shift" key, then press the "°C/°F/ K" key and the "Limit" icon will appear on the LCD to access the "Limit" setting function.

When an input temperature exceeds the alert temperature range defined, the buzzer will sound. To exit the function mode, press the "Shift" key once, then press the "°C/°F/ K" key, and the "Limit" icon will disappear from the LCD display to complete the process of exiting from the function mode.

9. T1-T2: The temperature differential function.

Press the "Shift" key, then press the "T1/T2" key and the "T1-T2" icon will appear on the LCD to access the "T1-T2" function.

A T1-T2 temperature differential readout will be shown on the LCD. For example: T1 defined at 25.3°C, T2 defined at 25.4°C, When "T1-T2" function is started, The LCD readout display will show "-0.1°C".

To exit from this function, press the "Shift" key once, then press the "T1/T2" key and the "T1-T2" icon will disappear from the LCD display to complete the progress of exiting from this function mode.

■ Operation

10.PC: The RS232/USB interface

Press the "Shift" key once, then press the "Time" key, and the "PC" icon will appear on the LCD display to access the RS232 interface feature.

To exit the function, press the "Shift" key once then press the "Time" key, and the "RS232" icon will disappear from the LCD display to exit the function mode.

Note: Upon accessing the PC function, the auto power off function will be disabled, even if you continue to press the power on/off key, until you disengage the USB interface function.

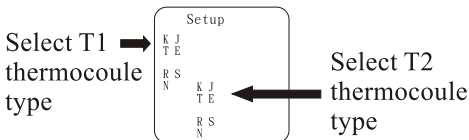
11.Set: Press the "Shift" key for 3 seconds and the "Setup" icon will appear on the LCD display to access the defining settings.

- When you press the "Time" key, then enter the "INTV" setting.
- Or press the "Max/Min" key, then enter the "Type" setting.
- Or press the "°C/°F/K" Key, then enter the "Hi/Lo" setting.

■ Operation

12.Type: The thermocouple type setting

Press "Shift" key for 3 seconds and the "Setup" icon will appear in the upper left of the LCD, and then press the "Max/Min" key to enter the thermocouple type setting, where the LCD will show as follows:



The process for choosing the thermocouple type is as follows:

A. Select T1 thermocouple type:

- Upon accessing T1's the "k" icon will begin to flicker, choose a thermocouple by using the scrolling keys, i.e. The "Max/Min" key for up, the "Time" key for down; the "Hold" key for left; the "T1,T2" key for right. And then press "Shift" key to complete T1 thermocouple type selection. The LCD shows the left.

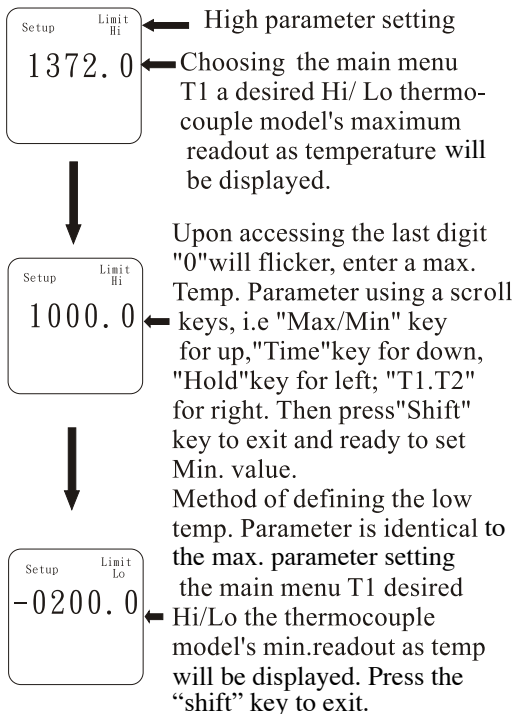
B. Select T2 thermocouple type:

- The process for selecting T2 thermocouple type is identical as section A. When choosing T2 thermocouple type, press the "Shift" key to complete and the LCD will show your choosing.

■ Operation

13.Hi/Lo:The alert temperature range setting.

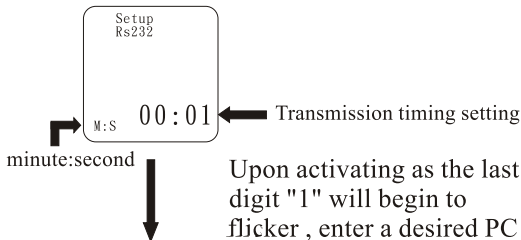
Press the "Shift" key for 3 seconds and the "Set up" icon" will appear on the upper left of the LCD, press the "°C/°F K" key to enter the "Hi/Lo" parameter settings, where the LCD shows as follows:



■ Operation

14.Intv:PC transmission timing setting.

Press down the "Shift" button for approx.3 seconds as the wording "Setup" will be prompted on upper left of the LCD, then press the "Time" key to access the PC transmission timing setting, the screen will show:

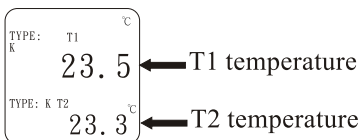


Upon activating as the last digit "1" will begin to flicker , enter a desired PC transmission timing by using the scroll keys, i.e the "Max/Min" key for scrolling up; The "Time" key for scrolling down; the "T1/T2" key for scrolling toward right, and then press the "Shift" key to exit.

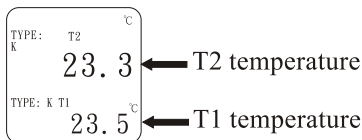
To set the PC transmission timing, the minimum setting time is at one second, and maximum is at 59 minutes and 59 seconds.

■ Operation

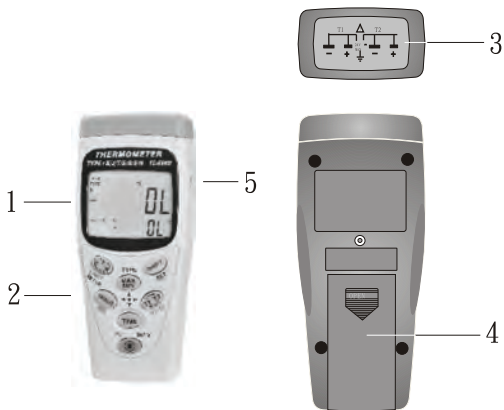
15. T1/T2: T1/T2 Temperature switchover function
key: Press the T1/T2 key alternately to flip T1 temperature display into T2 temperature, and T2 will flip into T1. The switchover of T1 and T2 temperature is as follows:



↓ Pressing T1/T2 button



Names Of Parts



- 1.LCD display
- 2.Function control key
- 3.Temperature jack
- 4.Battery cover
- 5.PC jack

■ Battery replacement

1. The symbol "🔋" that appears in the upper left of the LCD display indicates that the unit's battery is running low. Please replace the 9V battery at once to ensure the test accuracy.
2. Remove the battery cover by following the direction marked "OPEN" to slide down the cover, and remove the cover accordingly.
3. Replace the old battery with a new 9V battery and reinsert the battery cover.
4. Prior to replacing the battery, please make certain to remove the thermocouple from the temperature meter as a safety precaution.
5. When in extended idle, please remove the 9V battery from the temperature meter and store the temperature meter only in a cool and low-humidity setting.
6. To avoid combustion, DO NOT dispose of batteries in general into an open flame.
7. Please take note of the positive and negative polarity when loading battery
8. Please abide by pertinent laws and regulations when disposing of used batteries.

■ **Caution**

1. Input protection: The temperature jack carries a maximum voltage of 24 volts DC or AC, with a maximum surge-attenuated voltage rating-the maximum surge-attenuated voltage ratings on terminals T1 and T2 temperature input jack rated at 1 volt.
2. Temperature jacks: Designed for the insertion of SMP thermocouple jacks, which have spacing of 7.9mm between the two prongs.
3. Please DO NOT placed inside a microwave for temperature testing.
4. A correct thermocouple slot should be chosen when operating the temperature meter.
5. Please DO NOT attempt to use a temperature meter that is not working properly, for this may result in physical harm.
6. Please DO NOT attempt to operate the temperature meter around sites where explosive gases, vapor or dust particles are present.
7. Please refrain from subjecting the paired thermocouple or the grounding between the thermocouples to a voltage exceeding what has been marked on the unit.

■ NOTES:

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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 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.

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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 problems relative to the product.

FOR **NON-WARRANTY** REPAIRS, consult OMEGA for current repair charges. Have the following information available BEFORE contacting OMEGA:

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2. Model and serial number of the product, and
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