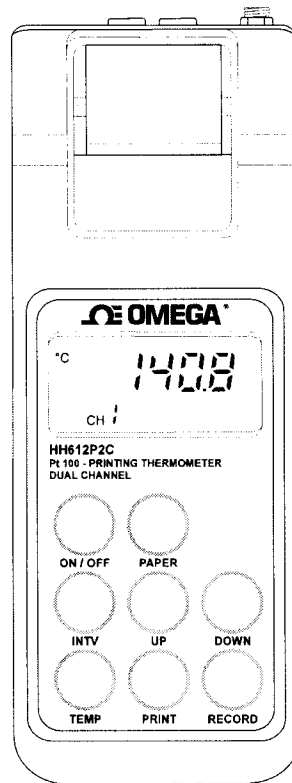


# Instruction Manual

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## HH612P2C Printing Pt 100 Thermometer



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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, patient-connected applications.

Dear Customer,  
Thank you for choosing an OMEGA Product.  
Please read this instruction manual carefully  
before using the instrument.  
This manual will provide you with all the necessary information for the correct use of the instrument, as well as a more precise idea of its versatility in a wide range of applications.  
This instrument is in compliance with the **CE** directives EN 50081-1 and EN 50082-1.

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## PRELIMINARY EXAMINATION

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

HH612P2C is supplied complete with:

- Paper Rolls (5 pcs)
- 1.5V AA size Batteries (4 pcs)
- Rugged Carrying Case

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

## GENERAL DESCRIPTION

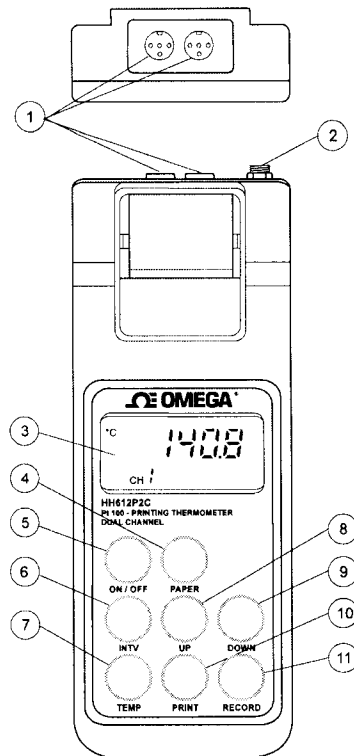
The OMEGA portable Pt 100 thermometer with built-in printer is microprocessor-based and enables you to accurately measure temperature and record data.

The instrument housing is made of rugged and lightweight material.

Equipped with a large, easy-to-read LCD, it features an extended battery life and a special design that enables results to be obtained even in humid, wet or dusty conditions.

Measurements can be performed with lab-grade precision in the field as well as in the laboratory without compromising accuracy. A 12VDC car battery or a battery charger can also be used to power the unit for extended use.

## FUNCTIONAL DESCRIPTION



1. Pt 100 Probe Connector/s
2. Power adapter plug
3. LCD Display
4. **PAPER** key to feed the paper
5. **ON/OFF** key, to turn the meter on or off
6. **INTV** key to select the printing interval
7. **TEMP** key, to select the resolution or the channel number
8. **UP** key to set up
9. **DOWN** key to set up
10. **PRINT** key to obtain a printout (printing present time and temperature/s)
11. **RECORD** key to enter the recording mode

## SPECIFICATIONS

	<b>HH612P2C</b>
<b>Range</b>	-200.0 to 850.0°C
<b>Resolution</b>	0.1/1°C selectable
<b>Accuracy (@25°C/77°F)</b>	±(0.1°C +0.1% of the actual reading) for one year, excluding probe error
<b>Typical EMC Deviation</b>	±0.5°C
<b>Power</b>	4x1.5V AA size, life of 500 hours with 60' printing interval Socket for 12VDC adapter
<b>Auto Shut-off</b>	After 5 minutes of non-use
<b>Channels</b>	2
<b>Sensor Type</b>	Platinum RTD (alpha = 0.00385) 4 wires
<b>Printer</b>	Low-power impact belt type, 14 characters per line using 38 mm plain paper
<b>Printing Intervals</b>	1, 2, 5, 10, 15, 30, 60, 120 and 180 minutes
<b>Environment</b>	0 to 50 °C (32 to 122°F) Max. 95% RH
<b>Dimensions</b>	220x82x66mm (8.7x3.2x2.6")
<b>Shipping Weight</b>	Instrument: 500g (18 oz.) Kit: 1.4 kg (3.1 lb.)

## INITIAL PREPARATION

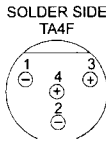
The meter is supplied complete with batteries.

Remove the back cover, unwrap the batteries and install them while paying attention to the polarity.

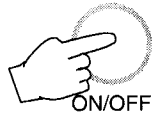
To prepare the instrument for use, connect a 4-wire Pt 100 temperature probe to the connector located on the top of the instrument.

To wire a RTD to the TA4F connector, solder the leads as shown at right:

- pin 1 negative
- pin 2 negative
- pin 3 positive
- pin 4 positive

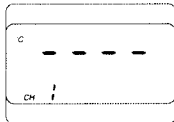


To switch the meter on, press the ON/OFF key.



With the meter facing you, channel #1 is the first connector on the top left hand side.

If the Pt 100 temperature probe is not connected to the instrument, the meter will display and print "----" to alert the user.



This also indicates the possibility of a broken probe cable.

**Note:** To ensure accurate readings it is recommended that the temperature probes be connected to consecutive channels beginning with channel #1. If only one probe is used, it must be connected to channel #1.

To maximize battery life, the display is automatically switched off after 5 minutes of non-use. However, the meter will continue to monitor (if in the logging/recording mode) temperature.

To revive the display, press the ON/OFF key .





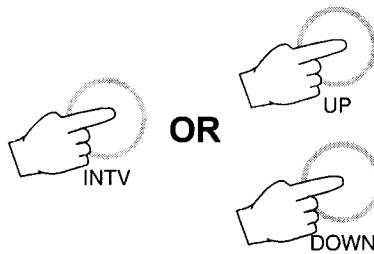
## OPERATIONAL GUIDE

### SETTING THE PRINTING INTERVAL

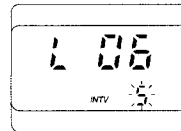
Turn the instrument on by pressing the ON/OFF key.



Press the INTV and the UP or DOWN keys simultaneously.



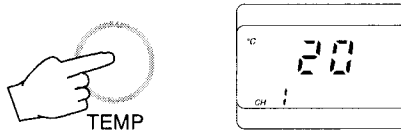
The display will show the log number. At the bottom of the display the printing interval will be flashing.



Keep the INTV key pressed and set the printing interval by pressing the UP or DOWN key.

### SETTING THE MEASUREMENT RESOLUTION

Press the TEMP key to select the 0.1° or 1° resolution.



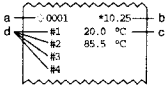
To return the reading to its original resolution, simply press the TEMP key again.

**PRINTING / RECORDING**

To print the measured values press the PRINT key. The printout provides the following information:

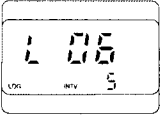


- a - Running sample number
- b - Accumulative time
- c - Temperature value
- d - Channel #



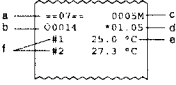
**RECORDING MODE (PROGRAMMED PRINTOUTS)**

Press the RECORD key to enter the recording mode. The log number will appear for a few seconds on the display to indicate the correct operational mode. The meter will write the first measurement/s taken in that moment, and will print at the interval selected thereafter until the ON/OFF key is pressed.

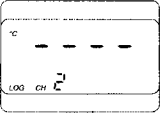


The printout provides the following information:

- a - A running log number
- b - A running sample number (in that particular log)
- c - Printing interval indicator in minutes
- d - The accumulated time since printing started (HH.MM)
- e - Temperature value/s
- f - Channel number.



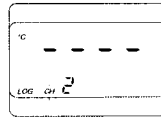
If only one probe is plugged in during recording mode, the meter will print only the value of the connected probe.



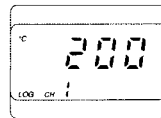
If the second probe is not connected during the recording mode, the data from the second probe will not be printed.

Data from the second channel can only be added if the recording mode is exited and a new log number is entered.

A blinking "CH" will appear on the display next to the channel number not utilized and/or recorded.



When the meter is in recording mode "LOG" is displayed on the bottom left corner of the LCD with the temperature value on the primary display.



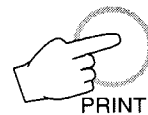
If no keys are pressed, the meter goes to standby mode to prolong battery life.

To reactivate the display press the ON/OFF key



#### Notes:

- It is recommended to use the power supply (**HH610-AC** or **HH610-AC-220V**) during recording mode, especially when many printouts are going to be taken.
- Before proceeding with recording, make sure there is enough paper for your measurements. When the paper is finished the meter will not advise the operator and the printouts could be lost.
- It is possible to insert a new paper roll during recording session (see page 14).
- If the PRINT key is pressed while still in recording mode, a printout is produced without affecting the running number.



- Once in recording mode, the printing interval cannot be changed. Exit the recording mode first (pressing the ON/OFF key) before setting the new interval.

***TO STOP RECORDING***

In order to quit the recording mode, press the ON/OFF key.



## FAULT FUNCTIONS

The meter is factory programmed to automatically diagnose a fault. This is displayed with error codes on the LCD.

Error codes:

PEr 0, PEr 1, PEr 2 = Short circuit on the system, the meter should be returned for repair (see Warranty section).

PEr 3 = Printer mechanism fault - repair needed (see Warranty section).

PEr 4 = Printer clutch jammed - reset the printer (see page 15).

PEr 9 = Printer jammed - reset the printer (see page 15).

## PRINTER MAINTENANCE

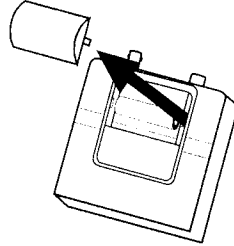
### **TO CHANGE THE INK CARTRIDGE**

When printouts become faint, it might be necessary to change the ink cartridge. Contact your OMEGA authorized center.

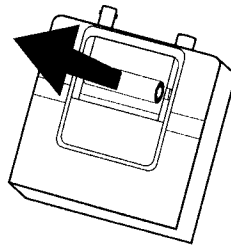
### **TO INSERT THE PAPER ROLL**

Use plain paper rolls 38 mm width (**HH610-PR**). To insert a new roll is very easy.

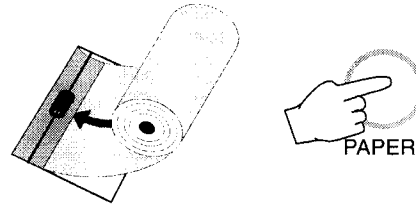
Open the paper cover pulling it gently.



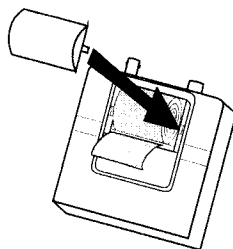
Take the carton cylinder away.



Insert the paper edge in the printer slot and feed the printer by pressing the PAPER key.



Allow approximately 5 cm (2") to exit from the printer and replace the paper cover.

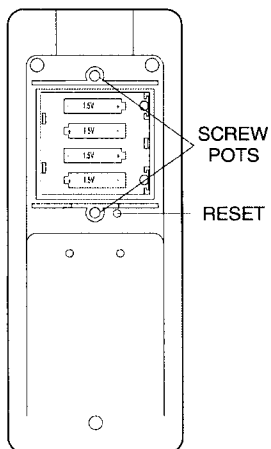


**TO RESET PRINTER**

Press PAPER to reset the printer when jammed.



If the printer is still jammed, take the battery cover off by removing the screws. Using a pencil press the black button. This will reset the printing mechanism.

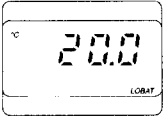


Before replacing the battery cover investigate the cause of the printer jam (e.g. the paper caught under the cover and prevented printer from advancing paper feed).

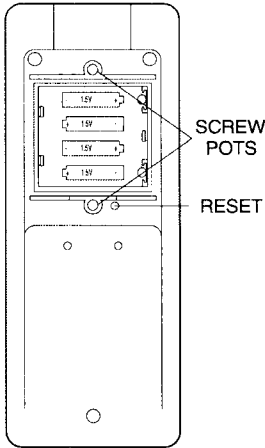
Replace the battery cover and secure screws.

## BATTERY REPLACEMENT

If "LO BAT" appears on the display, it is an indication that the batteries are running down. If it appears during printing, it means that 200 printouts can be made before the batteries are exhausted. When there is only sufficient power for 100 printouts, the "LO BAT" sign is displayed continuously on the LCD.



Battery replacement must only take place in a non hazardous area using the battery types specified in this instruction manual.

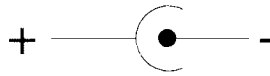


In order to replace run down batteries, simply remove the two screws on the rear cover of the instrument and replace the four 1.5V AA batteries with new ones, paying attention to the correct polarity.

A 12VDC power source can also be used to power the unit (see the Accessories section page 18).



**Note:** The instrument uses the following configuration.



It is recommendable to purchase OMEGA **HH610-AC** and **HH610-AC-220** voltage adapters that use the proper polarity configuration. Other adapters can also be used. In this case, remember to check the correct polarity of your adapter before connecting it to the meter.

## CALIBRATION

All OMEGA 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.

## ACCESSORIES

<b>HH610-AC</b>	110VAC to 12VDC voltage adapter
<b>HH610-AC-220</b>	220VAC to 12VDC voltage adapter
<b>HH610-PR</b>	10 Plain Paper Spare Rolls
<b>TA4F</b>	Mating 4-pin RTD connector

## WARRANTY

### 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 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.

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 which wear are not warranted, including but not limited to contact points, fuses, and triacs.

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### RETURN REQUESTS/INQUIRIES

Direct all warranty and repair requests/inquiries to the OMEGA Customer Service Department. BEFORE RETURNING ANY PRODUCT(S) 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 breakage in transit.

FOR WARRANTY RETURNS, please have 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 problems relative to the product.

FOR NON-WARRANTY REPAIRS, consult 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 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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