



## RH80 Series

### Precision Fast Response Thermo-Hygrometers

Operator's  
Manual

M2029/1194



#### Unpacking Instructions

Remove the Packing List and verify that you have received all equipment, including the following (quantities in parentheses):

RH80 Series Thermo-Hygrometer (1)

AAA alkaline batteries (2)

Operator's Manual (1)

If you have any questions about the shipment, please call the OMEGA Customer Service Department.

When you receive the shipment, inspect the container and equipment for signs of damage. Note any evidence of rough handling in transit. Immediately report any damage to the shipping agent.

#### NOTE

The carrier will not honor damage claims unless all shipping material is saved for inspection. After examining and removing contents, save packing material and carton in the event reshipment is necessary.

#### Description

The OMEGA® RH80 Series Thermo-Hygrometers are compact in size and easily fit into your shirt pocket. The cover protects the sensor and also acts as a handy pocket clip. The RH81 Hygrometer has min/max data storage, data hold and auto power off features. The RH82 has the above features and also measures dew point. The RH83 has all of the features of the RH82 and also measures wet bulb temperature.

## Features

- Compact size
- °F/°C switchable
- Data Hold
- Min/Max Data Storage
- Auto power off after 20 minutes

## Available Models

The following models are available from OMEGA Engineering, Inc.

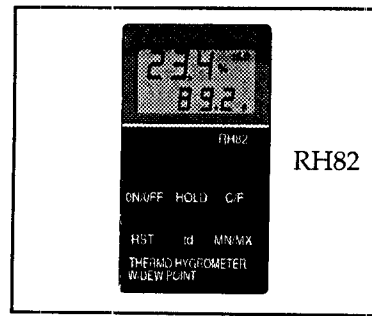
Model Number	Dew Point	Wet Bulb
RH81	No	No
RH82	Yes	No
RH83	Yes	Yes

## Parts of the Thermo-Hygrometer

### Celsius/Fahrenheit Button (C/F)

Press and hold C/F button to alternate between the Celsius reading and Fahrenheit reading.

## Parts of the Thermo-Hygrometer (Cont'd)



### ON/OFF Button

Press the ON/OFF button to turn on or off the hygrometer. When turned on the display shows all of the parts of the display and then displays the relative humidity and temperature.

### DATA HOLD Button (HOLD)

Press and hold button until "HLD" appears on the display. The current reading is now being held and will not change until the hold function is cancelled. Press RESET button to cancel Hold function. Hold function can be used for temperature, humidity, dew point and wet bulb.

### MIN/MAX Button (MN/MX)

#### Functions

1. Press and hold MN/MX button until "MIN" appears on the display. The display is now showing minimum humidity and temperature readings in memory.
2. Press and hold MN/MX button until "MAX" appears on the display. The display is now showing maximum humidity and temperature readings in memory.
3. To return to current temperature and humidity readings, press and hold the MN/MX button until "MAX" disappears from the display. NOTE: "MIN" changes to "MAX" first when pressing and holding the MN/MX button, and then blanks out.
4. To clear the current Min or Max reading from memory, press and hold RESET (RST) button until the entire display flashes.

### DEW POINT Button (td on the RH82) or (td/WBT on the RH83)

Press and hold td or td/WBT button until "td" appears on the left side of the display. The unit now displays the dew point and temperature.

### WET BULB Button (td/WBT) (only on RH83)

Press and hold td/WBT button until "WB" appears on the left side of the display. The unit now displays the Wet bulb Temperature. Intermittent flashing of "WB" indicates that the current reading is being calculated and updated due to constant changes in humidity and temperature in the environment.

### RESET Button (RST)

Press and hold the RST button to cancel the Hold function, or to clear the current Min/Max reading.

### TO EXIT DEW POINT/WET BULB

Press and hold the td/WBT button until "td" or "WB" disappears from the display.

**AUTO POWER OFF FEATURE**

Unit will turn itself off after 20 minutes (sleep mode).

To override the auto-power off function (non-sleep mode),

1. Start with the unit off.
2. Press the ON/OFF button and MIN/MAX buttons simultaneously.
3. After the full display appears, release the ON/OFF button. The display shows "n".
4. When "n" appears, release the MN/MX button.

The unit will now be in non-sleep mode.

To return to sleep mode, press the ON/OFF button.

**LO-BATTERY INDICATOR (only on RH82/83)**

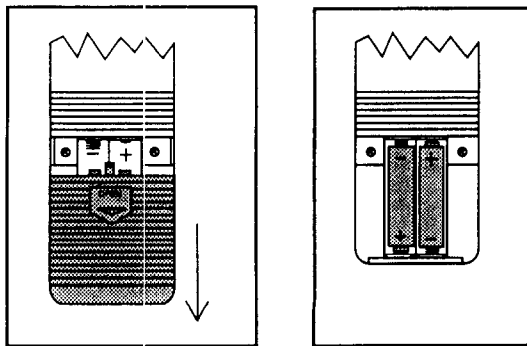
Lo-battery indication is signaled by the entire display flashing. This is the signal to replace the batteries (2 AAA size batteries). Failure to replace the batteries affect the accuracy of the readings from the hygrometer.

**NOTE**

Low (weak) batteries tend to give inaccurate readings, so make sure fresh batteries are installed in the unit.

**Installing/Replacing Batteries**

To install/replace batteries, go through the following steps:



1. Remove battery cover as shown in the figure.
2. Remove worn batteries if necessary and install the batteries observing polarity.
3. Slide the battery cover back on unit.

**Operation**

1. Make sure the batteries in installed.
2. Remove the protective sensor cover.

3. Turn on the meter by pressing the ON/OFF button. You will see a full initial display.
4. Press C/F button to convert the reading to Celsius or Fahrenheit. Relative humidity and temperature are displayed simultaneously.

**NOTE**

DO NOT immerse the hygrometer probe into liquids since this causes permanent damage to the sensor.

**Specifications:**

- Humidity Sensor: Electronic capacitance polymer film sensor (Condensation will not affect meter's accuracy)
- Temperature Sensor: Thermistor
- Display: LCD, dual, %RH display - 3 digits  
Temperature display - 3-1/2 digits
- Accuracy:
  - Temperature:  $\pm 1^{\circ}\text{F}$  ( $\pm 1^{\circ}\text{C}$ )
  - RH (RH81):  $\pm 4\%$  @  $25^{\circ}\text{C}$  from 10 to 90%,  
 $\pm 5\%$  other ranges
  - (RH82/83):  $\pm 3\%$  @  $25^{\circ}\text{C}$  from 10 to 90%,  
 $\pm 4\%$  other ranges
- Resolution
  - Temperature:  $0.1^{\circ}\text{F}$  ( $0.1^{\circ}\text{C}$ )
  - RH: 0.1% RH
- Response Time: 80 sec typ. (RH81); 60 sec typ. (RH82/83)
- Power: Two (2) AAA alkaline batteries
- Battery Life: 500 hours typical
- Dimensions:  $6.7" \times 1.9" \times 0.65"$   
( $170 \times 49 \times 16.5\text{mm}$ )
- Weight: 3.3 ounces (94 g)

Model Number	Dew point	Wet Bulb	RH Range	Temperature Range
RH81	No	No	5 to 95%	$14^{\circ}$ to $122^{\circ}\text{F}$ ( $-10^{\circ}$ to $50^{\circ}\text{C}$ )
RH82	Yes	No	0 to 100%	$-4^{\circ}$ to $122^{\circ}\text{F}$ ( $-20^{\circ}$ to $50^{\circ}\text{C}$ )
RH83	Yes	Yes	0 to 100%	$-4^{\circ}$ to $122^{\circ}\text{F}$ ( $-20^{\circ}$ to $50^{\circ}\text{C}$ )



**Servicing USA and Canada: Call OMEGA Toll Free**

**USA**

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FAX: (203) 359-7700

**Canada**

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Laval (Quebec) H7L 5A1  
Telephone: (514) 856-6928  
FAX: (514) 856-6886

**WARRANTY**

OMEGA warrants this unit to be free of defects in materials and workmanship and to give satisfactory service for a period of **13 months** from date of purchase. OMEGA 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 should malfunction, 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. However, 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 or other operating conditions outside of OMEGA's control. Components which wear or which are damaged by misuse are not warranted. These include contact points, fuses, and triacs.

**OMEGA is glad to offer suggestions on the use of its various products. Nevertheless, OMEGA only warrants that the parts manufactured by it will be as specified and free of defects.**

**OMEGA MAKES NO OTHER WARRANTIES OR REPRESENTATIONS OF ANY KIND WHATSOEVER, EXPRESSED OR IMPLIED, EXCEPT THAT OF TITLE AND ALL IMPLIED 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.**

Every precaution for accuracy has been taken in the preparation of this manual; however, OMEGA ENGINEERING, INC. neither assumes responsibility for any omissions or errors that may appear nor assumes liability for any damages that result from the use of the products in accordance with the information contained in the manual.

**SPECIAL CONDITION:** Should this equipment be used in or with any nuclear installation or activity, purchaser will indemnify OMEGA and hold OMEGA harmless from any liability or damage whatsoever arising out of the use of the equipment in such a manner.

Sales Service: 1-800-826-6342 / 1-800-TC-OMEGA<sup>SM</sup>  
Customer Service: 1-800-622-2378 / 1-800-622-BEST<sup>SM</sup>  
Engineering Service: 1-800-872-9436 / 1-800-USA-WHEN<sup>SM</sup>  
TELEX: 996404 EASYLINK: 62968934 CABLE: OMEGA

**Servicing Europe: United Kingdom Sales and Distribution Center**

25 Swannington Road, Broughton Astley, Leicestershire  
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**RETURN REQUESTS / INQUIRIES**

Direct all warranty and repair requests/inquiries to the OMEGA ENGINEERING 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.

FOR **WARRANTY** RETURNS, please have the following information available BEFORE contacting OMEGA:

1. P.O. 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 OR **CALIBRATION**, consult OMEGA for current repair/calibration charges. Have the following information available BEFORE contacting OMEGA:

1. P.O. number to cover the COST of the repair/calibration,
2. Model and serial number of product, and
3. Repair instructions and/or specific problems relative to the product.

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