

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

**OMEGA is pleased to offer suggestions on the use of its various products. However, OMEGA neither assumes responsibility for any omissions or errors nor assumes liability for any damages that result from the use of its products in accordance with information provided by OMEGA, either verbal or written. OMEGA warrants only that the parts manufactured by the company 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.**

CONDITIONS: Equipment sold by OMEGA is not intended to be used, nor shall it be used: (1) as a "Basic Component" under 10 CFR 21 (NRC), used in or with any nuclear installation or activity; or (2) in medical applications or used on humans. Should any Product(s) be used in or with any nuclear installation or activity, medical application, used on humans, or misused in any way, OMEGA assumes no responsibility as set forth in our basic WARRANTY/DISCLAIMER language, and, additionally, purchaser will indemnify OMEGA and hold OMEGA harmless from any liability or damage whatsoever arising out of the use of the Product(s) in such a manner.

## 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.

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 or calibration,
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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Down arrow keys to change the Emissivity value.

⑦ This is the High alarm display screen (HAL). It shows the high alarm set point for the relative humidity, and the status. You can change the alarm set point value using the Up and Down arrow keys. You can change the alarm set point value using the Up and Down arrow keys. You can change the alarm status (On/Off) by pressing the SET key.

⑧ This is the Low alarm display screen (LAL). It shows the low alarm set point for the relative humidity, and the status. You can change the alarm set point value using the Up and Down arrow keys. You can change the alarm status (On/Off) by pressing the SET key.

⑨ This is the recording interval display screen. You can set the recording interval from 2 to 60 seconds using the Up and Down arrow keys. When the recording function is initiated (Pressing SET/REC key), the LOG icon will turn on, and the unit will record relative humidity, ambient temperature, infrared temperature, and the two thermocouple temperatures per recording interval in the non-volatile memory.

⑩ This is the Auto Power shut off display screen. You can turn on/off the auto power shut off by pressing the SET key.

⑪ This is the main display screen when the data logging function is turned on. The LOG icon is shown on the display.

⑫ This display shows the maximum values of the relative humidity, ambient temperature, and the infrared temperature during the session. You can press the SET key to reset the Max/Min values.

⑬ This display shows the minimum values of the relative humidity, ambient temperature, and the infrared temperature during the session. You can press the SET key to reset the Max/Min values.

⑭ This is the main display screen when the Hold function is turned on. The relative humidity, ambient temperature, and infrared temperature values are frozen until the Hold key is pressed again to turn off the function.

⑮ This display screen shows the relative humidity, Dew point temperature (DP) and the infrared temperature (IR-T).

⑯ This display screen shows the relative humidity, Wet Bulb temperature (WB), and the infrared temperature (IR-T).

⑰ This display screen shows the air moisture content in GPP (Grains per Pound), ambient temperature, and the infrared temperature. The moisture content can be displayed in g/Kg when the temperatures are displayed in °C.

⑱ This display shows the status of the wireless radio. It can be turned on/off using the SET key. When turned on, the RH511 becomes a wireless receiver and can receive wireless signals from our wireless temperature

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humidity transmitter, model CTXL-PT series.

⑲ This display shows the wireless transmission interval. It can be set to 2, 10, 30, 60, 120 seconds using the Up and Down arrow keys.

⑳ This display shows the unit ID address. It can set from 00 to 99 using the Up and Down arrow keys.

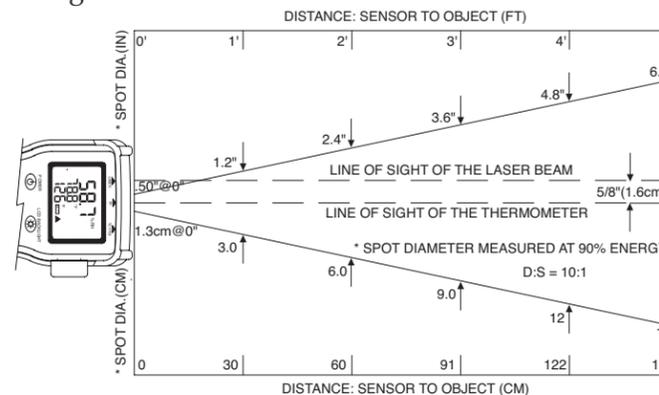
### Enable Data Logging

You initiate logging data (Relative Humidity, Ambient temperature, Infrared temperature, Thermocouple 1, Thermocouple 2) by pressing the SET/REC key from the following display menus: RH/Temp/IR (Main Menu)  
RH/TC1/IR  
RH/TC1/TC2  
RH/TC1-TC2/IR  
RH/Temp/TC2

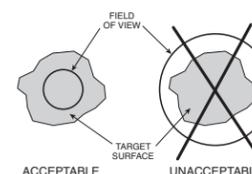
The LOG display icon will turn on. The unit will log the five sets of data until the internal memory gets full. It will then stop logging data. The LOG display icon will blink accompanied by a one-time 3 beep warning. You can also stop logging data at any time by pressing the SET/REC key again.

### Infrared Function

You can set the target emissivity from screen ⑥ (from **Display Screens Explained** Section). Simply aim the infrared lens to the target object, press and hold the laser button to turn on the laser beam. The laser beam indicates either the center of the target object (Laser Dot) or the area of the target being measured (Laser Circle). There is a 5/8 inch offset between the center of the optical field of view and the laser beam. It may take a few moments for the IR reading to stabilize.



Infrared Optical Field Of View Diagram



Positioning Infrared Target Temperature

## QUICK START

For complete product manual:  
[www.omega.com/manuals/manualpdf/M4954.pdf](http://www.omega.com/manuals/manualpdf/M4954.pdf)



## RH511

**Temperature/Relative Humidity  
Non-contact Infrared/Thermocouple  
Handheld Meter & Logger  
with Wireless Temp/RH Probe Option**



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### Servicing North America:

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P.O. Box 4047, Stamford, CT 06905-0047 USA  
Toll-Free: 1-800-826-6342 (USA & Canada Only)  
Customer Service: 1-800-622-2378 (USA & Canada Only)  
Engineering Service: 1-800-872-9436 (USA & Canada Only)  
Tel: (203) 359-1660 Fax: (203) 359-7700  
e-mail: info@omega.com

For Other Locations Visit [omega.com/worldwide](http://omega.com/worldwide)

It is the policy of OMEGA Engineering, Inc. to comply with all worldwide safety and EMC/EMI regulations that apply. OMEGA is constantly pursuing certification of its products to the European New Approach Directives. OMEGA will add the CE mark to every appropriate device upon certification.

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.

**START HERE**

**Using This Quick Start Manual**

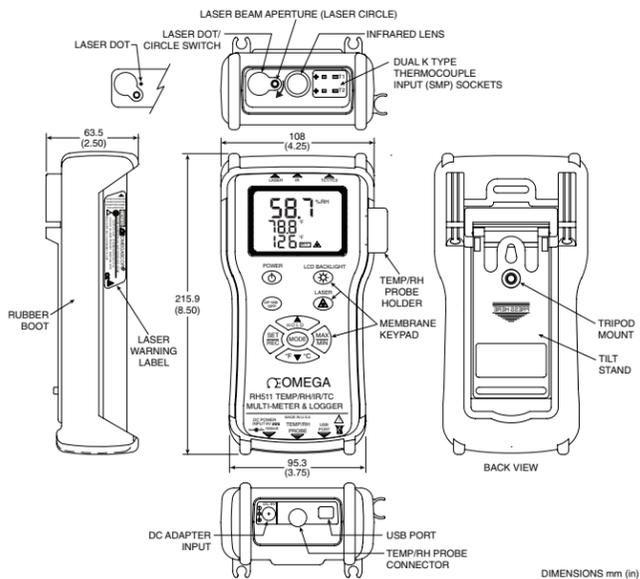
Use this Quick Start Manual with your RH511 handheld/benchtop meter for quick setup and basic operation. For detailed information, refer to the User's Guide (Manual # M4954).

**General Information**

The RH511 is a handheld/benchtop meter that can measure & display ambient temperature, relative humidity, non-contact infrared temperature, and dual K type thermocouple temperatures. RH511 has built-in wireless capability. It acts as a wireless receiver when used with our wireless temperature/RH transmitter, model CTXL-PT.

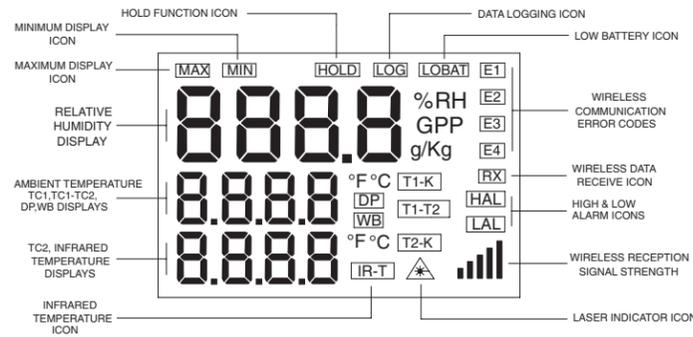
RH511 has a built-in laser sighting feature used as an aiming tool to measure non-contact target temperatures. The laser beam is switchable between laser dot and circle. RH511 operates from 6 AA size batteries. It also has 9Vdc adapter input and USB PC interface. The USB port is used to configure the unit and downloading logged data.

RH511 has logging capability where the user can log all the inputs (Ambient Temperature, Relative Humidity, Thermocouple 1, Thermocouple 2, and Infrared Temperature) simultaneously. The logging interval can be set from the front keypad and the display menus.



Dimensions And Locations Of Key Features

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Custom LCD Display Of RH511 General

**Operation**

In order to install the 6 AA size batteries, remove the yellow rubber boot, and unscrew the battery door with the case to get to the battery compartment.

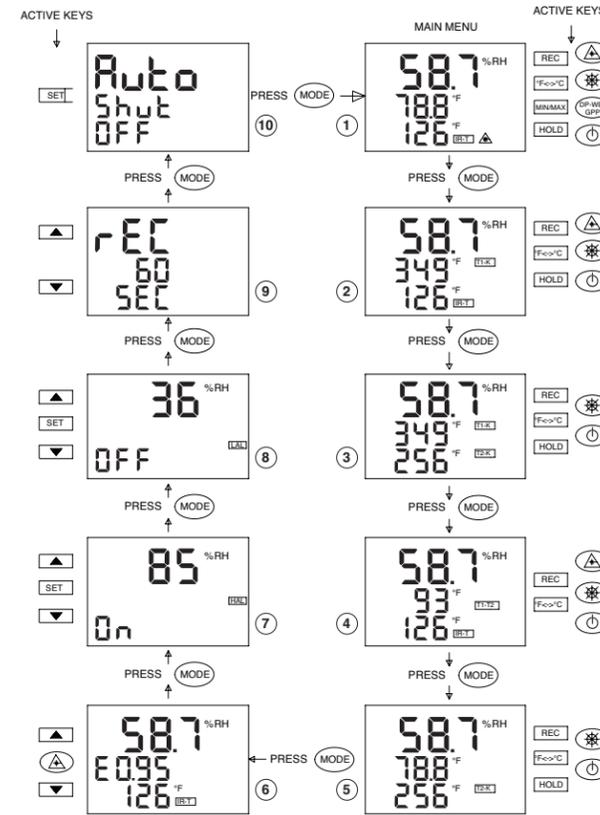
After installing the batteries, close the battery door, and put back on the rubber boot. If the unit comes with a wired temperature/RH probe, connect the probe to the meter. The connection is at the bottom of the unit. The probe can be attached to the meter via the probe holder on the side.

Press the Power button to turn on the unit. The display will show the relative humidity, ambient temperature, and the no-contact infrared temperature.

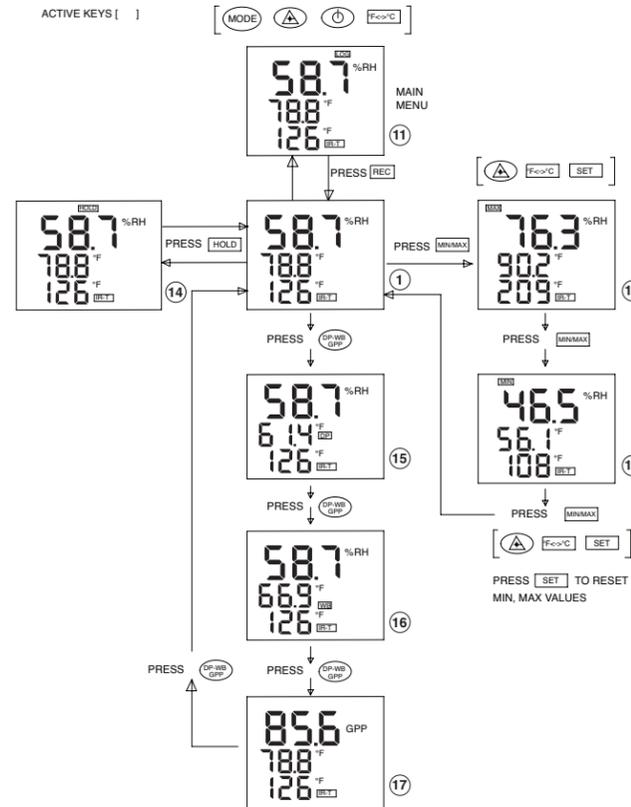
Screen No.	Mode	Press Mode	Press SET/REC	Press Up/Hold	Press Down/ $\text{F} \leftrightarrow \text{C}$
1	RH/Temp/IR	Go to RH/TC1/IR	Start/Stop Record	Enable/Disable	Temp in $^{\circ}\text{F}$ or $^{\circ}\text{C}$
2	RH/TC1/IR	Go to RH/TC1/TC2	Same	Same	Same
3	RH/TC1/TC2	Go to RH/TC1-TC2/IR	Same	Same	Same
4	RH/TC1-TC2/IR	Go to RH/Temp/TC2	Same	Same	Same
5	RH/Temp/TC2	Go to RH/Emiss/IR	Same	Same	Same
6	RH/Emiss/IR	Go to High Alarm	-----	Increase Emissivity	Decrease Emissivity
7	RH-High Alarm	Go to Low Alarm	Enable/Disable Alarm	Increase High Alarm set point	Decrease High Alarm set point
8	RH-Low Alarm	Go to Recording Interval	Enable/Disable Alarm	Increase Low Alarm set point	Decrease Low Alarm set point
9	Recording Interval	Go to Auto Power Shut off	-----	Increase Recording Interval	Decrease Recording Interval
10	Auto Power Shut Off	Go to RH/Temp/IR	Enable/Disable Power shut off	-----	-----

Keypad Flow Chart

**3**

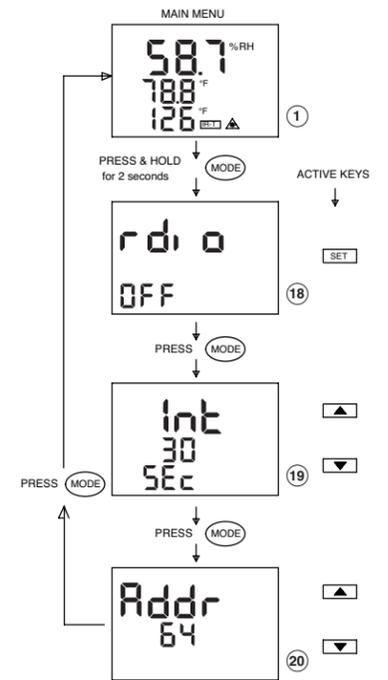


Main Functional Flow Chart



Additional Function Flow Chart

**4**



Wireless Function Flow Chart

**Display Screens Explained**

- This is the main display screen when you power up the unit. It displays the relative humidity (%RH), ambient temperature ( $^{\circ}\text{F}$ ) on the second line, and the non-contact infrared temperature ( $^{\circ}\text{F}$ ) on the third line of the display. The IR-T icon indicates IR temperature measurement. Press and holding the laser key will turn on the laser beam and the laser icon on the display. There is a laser cover switch on front of the unit where by turning the cover, the laser beam changes from circle to laser dot.
- This display shows the relative humidity, thermocouple input 1 on the second line, and the infrared temperature on the third line of the display.
- This display shows the relative humidity, thermocouple input 1 on the second line, and the thermocouple input 2 on the third line of the display.
- This display shows the relative humidity, differential thermocouple temperature inputs 1 and 2 (T1-T2), and infrared temperature.
- This display shows the relative humidity, ambient temperature, and the second thermocouple input (T2-K).
- This display shows the relative humidity, Emissivity value for the IR measurement and the Infrared temperature. You can press the Up and