Instruction Manual

HI 9564 - HI 9565

Portable Water-Resistant Thermo-Hygrometers

HANNA instruments
www.hannainst.com

Dear Customer,
Thank you for choosing a Hanna product.
This manual will provide you with the necessary information for the correct operation of the meter. Please read it carefully before using the meter.
If you need additional technical information, do not hesitate to e-mail us at **tech@hannainst.com**.
These instruments are in compliance with the CE directives.

PRELIMINARY EXAMINATION

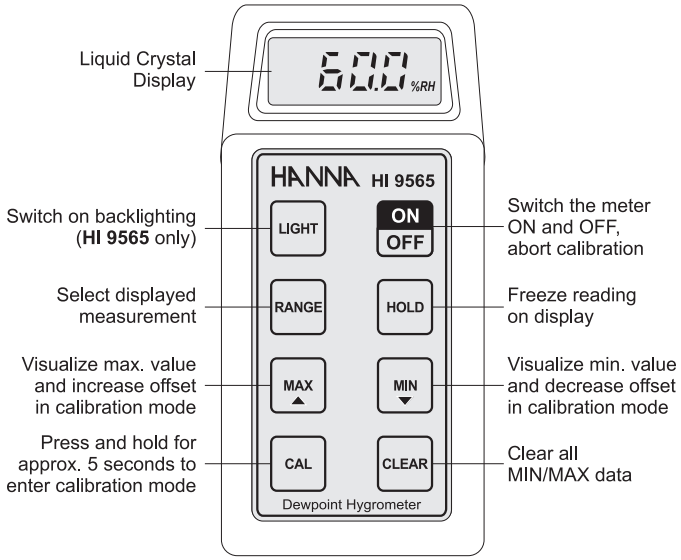
Remove the instrument from the packing material and examine it carefully to make sure that no damage has occurred during shipment. If there is any damage, notify your Dealer.

Both models come supplied with:

- **HI 70602** RH/temperature probe
- 9V battery
- instruction manual.

Note: Save all packing material until the instrument has been observed to function correctly. Any defective item must be returned in its original packing.

FUNCTIONAL DESCRIPTION



WARRANTY

All Hanna Instruments **meters are warranted for two years** against defects in workmanship and materials when used for their intended purpose and maintained according to instructions.
Probes are warranted for a period of six months.
This warranty is limited to repair or replacement free of charge.
Damage due to accidents, misuse, tampering or lack of prescribed maintenance are not covered.
If service is required, contact the dealer from whom you purchased the instrument. If under warranty, report the model number, date of purchase, serial number and the nature of the problem. If the repair is not covered by the warranty, you will be notified of the charges incurred. If the instrument is to be returned to Hanna Instruments, first obtain a Returned Goods Authorization Number from the Customer Service department and then send it with shipment costs prepaid.
When shipping any instrument, make sure it is properly packaged for complete protection.

Recommendations for Users
Before using these products, make sure that they are entirely suitable for the environment in which they are used.
Operation of these instruments in residential area could cause unacceptable interferences to radio and TV equipment, requiring the operator to take all necessary steps to correct interferences.
Any variation introduced by the user to the supplied equipment may degrade the instruments' EMC performance.
To avoid electrical shock, do not use these instruments when voltages at the measurement surface exceed 24VAC or 60 VDC. To avoid damages or burns, do not perform any measurement in microwave ovens.

GENERAL DESCRIPTION

HI 9564 and **HI 9565** are portable thermo-hygrometers for measurements of Temperature and Relative Humidity. **HI 9565** also shows the dewpoint calculated from the measured Temperature and Relative Humidity.

The instruments are housed in a rugged, water-resistant casing for maximum protection against effect of humidity and condensation.

The RH/temperature probe is a "smart probe" which contains the sensors, electronic sensor drive circuitry and memory to store the calibration information. This allows interchangeability between probes and meters without recalibration.

Note: The RH probe sensor must never come into contact with water or other liquids.

Hanna Instruments reserves the right to modify the design, construction and appearance of its products without advance notice.

SPECIFICATIONS

Range	20.0 to 95.0 % RH 0.0 to 60.0°C / 32.0 to 140.0°F **(*)**
dewpoint (HI 9565 only)	-20.0 to 60.0°C / -4.0 to 140.0°F
Resolution	0.1 % RH / 0.1°C / 0.1°F
dewpoint (HI 9565 only)	0.1°C / 0.1°F
Accuracy	±3 % RH (50 to 85 % RH & 15 to 40°C); ±5% RH (outside) ±0.5°C / ±1°F
dewpoint (HI 9565 only)	±2°C/±4°F (50 to 85 % RH & 15 to 40°C); ±4.5°C/±9°F (outside)
Typical EMC Dev.	±1 % RH ±0.5°C / ±1°F
dewpoint (HI 9565 only)	±0.5°C / ±1°F
Probe (included)	**HI 70602** RH/temperature probe
Battery Type	1 x 9V alkaline (IEC 6LR61)
Battery Life	250 hours of continuous use
Auto-off	after 20 minutes of non use
Environment	0 to 60°C (32 to 122°F); 98% RH non-condensing
Dimensions	164 x 76 x 45 mm (6.5 x 3.0 x 1.8")
Weight	340 g (12 oz.)

(*)Note: The meter measures temperature from -30 to 80°C, but the RH measurement can only be taken within the range 0 to 60 °C.

OPERATIONAL GUIDE

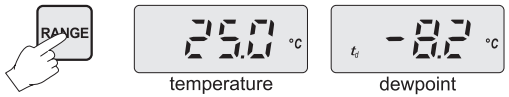
- The meter is supplied complete with a 9V battery. Remove the battery compartment cover on the back of the meter and install the battery while paying attention to its polarity.
- Connect the probe to the connector on the top of the instrument and switch ON by pressing the ON/OFF key.

Note: It is not recommended to install or remove the probe while the meter is on.

- At start-up the instrument displays all LCD segments for a few seconds (or as long as the ON/OFF button is held), then it shows the current RH measurement.

HI 9564 HI 9565

- To switch the display to show temperature, dewpoint (**HI 9565** only) or return to RH reading, press RANGE.



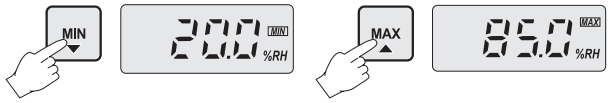
Note: A blinking full scale value means that the reading is out of range.

- To freeze the current measurement on the LCD, press HOLD. The "H" tag will blink and the meter continues measuring and updating the min/max values internally. Press HOLD to return to normal mode.

Note: Even in Hold mode, the user can still scrow through the channels with RANGE, to show the status of the meter when HOLD was pressed.

Note: The CLEAR and CAL keys are disabled when the meter is in Hold mode.

- To display the current minimum (or maximum) value for the current measurement range, while in normal or hold mode, press and hold the MIN (or MAX) key. The "MIN" (or "MAX") tag turns on while the corresponding button is pressed. The display will return to normal mode 1 second after releasing the button.

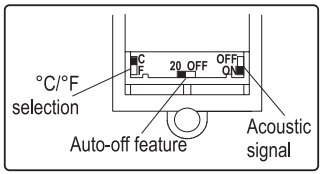


- To reset the min/max values to the current measurements, press CLEAR. This function clears the RH, temperature and dewpoint (**HI 9565** only) values together. The display will show the "CLr" message and then return to normal mode.

- To turn on/off backlighting (**HI 9565** only), press LIGHT. The backlight automatically shuts off after 1 minute without button use.

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

- Both models are provided with three slide switches located in the battery compartment which allow the user to select the following options:
  1. °C/°F unit for temperature and dewpoint (**HI 9565** only) readings;
  2. disable/enable (20 minutes) auto-off feature;
  3. disable/enable keypad acoustic signal.



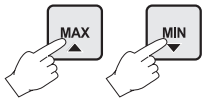
To access these features, remove the battery cover on the back of the meter and extract the battery. Select the desired settings, insert the battery and close the cover.

RH CALIBRATION

The RH calibration is a single point procedure (offset).

- To enter calibration: from normal mode press and hold the CAL button for approx. 5 seconds, until the display shows the "CAL" message. Release the button. The meter will display "OFS" and then flash the default value (60% RH) for calibration.

- Measure the actual RH value with a reference RH meter and then use the UP & DOWN arrow keys to match that reading. The value can be set within the 30 to 90% RH range.



Note: Hold the arrow keys to advance the display at a faster rate.

- Wait until the hourglass symbol (stability indicator) on the LCD turns off, then press CAL to accept the value.
  If all parameters are valid, the display shows the "Str" (Store) message for a few seconds and then returns to normal mode. If a parameter is not valid, an error message will be displayed (see "Error messages" section).

Note: Pressing CAL key while the hourglass symbol is on will not accept calibration.

- For successful calibration, the measured temperature must be within 15 to 35°C (59 to 95°F), and the displayed set value must be within ±9% RH of the actual measured value by the probe. When the CAL key is pressed to accept the value, the meter automatically verifies all parameters.
- To exit calibration mode without saving any values, press and release the ON/OFF button. The meter will display "ESC" and then shut off. Press ON/OFF to power the meter on and return to normal mode with the previous calibration data.

- To clear any previous offset calibration value, while in calibration mode, press and hold the ON/OFF key and then CAL. The meter will display the "CLr" message and then "Str", before returning to the normal mode.

Note: If a weak battery is detected or the probe is removed during calibration, the meter will abort the calibration procedure and shut off.

ERROR MESSAGES

<u>All modes of operation</u>

- Blinking values denote indicative readings. This will occur for the RH display and dewpoint display if the measured temperature is less than 0°C or greater than 60°C.
- A blinking full scale value means that the reading is out of range.

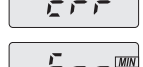

No data currently available to be displayed. If dashes are shown in MIN/MAX mode, press CLEAR to reset the values.


No probe connected or invalid calibration data retrieved from the probe. The meter continues checking probe until error condition is corrected.

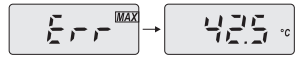

Error in temperature measurement: the reading is extremely over range or the probe is damaged.

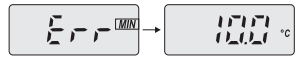

Error in RH measurement: the sensor is wet or the probe is damaged.

<u>Calibration mode, upon pressing CAL to accept value</u>


The measured RH is greater than the set value by more than 9% RH.


The measured RH is lower than the set value by more than 9% RH.


The calibration temperature is too high.


The calibration temperature is too low.

BATTERY REPLACEMENT

The BEPS (Battery Error Prevention System) recognizes two different low battery levels.

1. **Weak battery**: at start-up the display shows the "Cb" (Change battery) message for a few seconds, then enters normal operation together with a blinking battery symbol.

   The meter can still work for a few hours, but it is recommended to replace the battery soon.

2. **Dead battery**: at start-up the display shows the "Eb" (Error battery) message for a few seconds, then the meter shuts off to avoid erroneous readings. Replace the battery.

In order to replace a rundown battery, remove the battery compartment cover on the back of the meter and replace the battery with a new one, while paying attention to the correct polarity.

Battery replacement must only take place in a non hazardous area using a 9V alkaline battery.