Where Do I Find Everything I Need for Process Measurement and Control? OMEGA...Of Course!

TEMPERATURE

- Thermocouple, RTD & Thermistor Probes, Connectors, Panels & Assemblies
- Wire: Thermocouple, RTD & Thermistor
- Calibrators & Ice Point References
- Recorders, Controllers & Process Monitors
- Infrared Pyrometers

PRESSURE, STRAIN AND FORCE

- Transducers & Strain Gages
- Load Cells & Pressure Gages
- Displacement Transducers
- Instrumentation & Accessories

FLOW/LEVEL

- Rotameters, Gas Mass Flowmeters & Flow Computers
- Air Velocity Indicators
- Turbine/Paddlewheel Systems
- Totalizers & Batch Controllers

pH/CONDUCTIVITY

- pH Electrodes, Testers & Accessories
- Benchtop/Laboratory Meters
- Controllers, Calibrators, Simulators & Pumps
- Industrial pH & Conductivity Equipment

DATA ACQUISITION

- Data Acquisition & Engineering Software
- Communications-Based Acquisition Systems
- Plug-in Cards for Apple, IBM & Compatibles
- Datalogging Systems
- Recorders, Printers & Plotters

HEATERS

- Heating Cable
- Cartridge & Strip Heaters
- Immersion & Band Heaters
- Flexible Heaters
- Laboratory Heaters

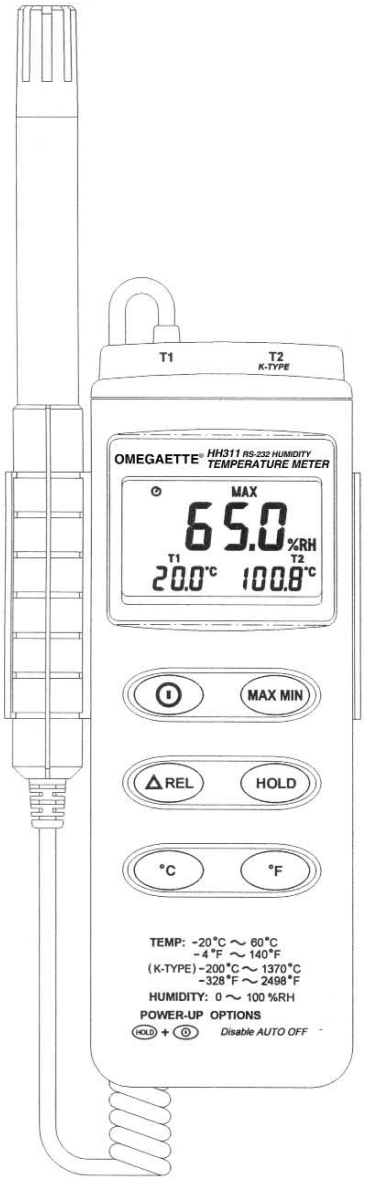
ENVIRONMENTAL MONITORING AND CONTROL

- Metering & Control Instrumentation
- Refractometers
- Pumps & Tubing
- Air, Soil & Water Monitors
- Industrial Water & Wastewater Treatment
- pH, Conductivity & Dissolved Oxygen Instruments

M3550/1299

CE

User's Guide



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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.

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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.

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CONTENTS

TITLE *PAGE*

I. Safety Information

Read the following safety information carefully before attempting to operate or service the meter. Use the meter only as specified in this manual; otherwise, the protection provided by the meter may be impaired.

Environment conditions

- Altitude up to 2000 meters
- Relatively humidity 90% max.
- Operation Ambient 0 ~ 50℃

Maintenance & Clearing

- Repairs or servicing not covered in this manual should only be performed by qualified personnel.
- Periodically wipe the case with a dry cloth. Do not use abrasives or solvents on this instrument.

Safety symbols

CE Comply with EMC

⚠ Read safety Information first.

II. Introduction:

This instrument is a digital Humidity / Temperature meter using a polymer capacitive and semiconductor sensor and K type thermocouple. This operations manual contains general product information and specification.

III. Specifications:

Numerical Display : 4 digital Liquid Crystal Display.

Measurement Range : Humidity: 0%~100%RH
Temperature: T1: -20℃~+60℃ , -4℉~+140℉
T2: -200℃~+1370℃ , -328℉~+2498℉

Resolution : Humidity: 0.1%RH
Temperature: T1: 0.1℃ , 0.1℉
T2: -200℃~200℃ 0.1℃ ; 200℃~1370℃ 1℃
-200℉~200℉ 0.1℉ ; else 1℉

Accuracy : Humidity:±2.5%RH at 25℃
Temperature: T1: ±0.7℃, ±1.4℉
T2: Please check the following table.

at (23+5°C)

Range	Accuracy
-200°C ~ 200°C	±(0.3% reading + 1°C)
200°C ~ 400°C	±(0.5% reading + 1°C)
400°C~1370°C	±(0.3% reading + 1°C)
-328°F ~ -200°F	±(0.5% reading + 2°F)
-200°F ~ 2498°F	±(0.3% reading + 2°F)

Temperature Coefficient:

For ambient temperatures from 0°C ~ 18°C and 28°C ~ 50°C, for each °C ambient below 18°C or above 28°C add the following tolerance into the accuracy spec.

0.01% of reading + 0.03°C
0.01% of reading + 0.06°F

⚠ **Note:**

The basic accuracy Specification does not include the error of the probe. Please refer to the probe accuracy specification for additional details.

Response Time : Humidity: 75 sec. In slowly moving air
Temperature: 40 sec. in slowly moving air (T1)

Signal Output : RS-232 Data Output

Operating Environment : 0℃~50℃, 32℉~122℉ 0 to 90%RH non-condensing

Storage Environment : -10℃~60℃, 14℉~140℉ 0 to 80%RH non-condensing

Power Requirements : Battery: One 9V battery
AC adapter: 9VDC / 10mA minimum

Plug Diameter: 3.5 mm×1.35mm

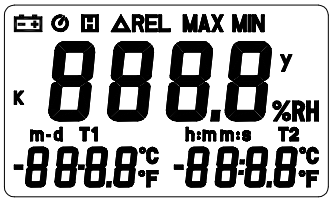
Battery Life : Approx. 100hrs with alkaline battery

Weight : Approx.320g

Dimension : Meter = 186(L)×64(W)×30(H)mm ; 10.8(L)×2.5(W)×1.2(H)inch
Probe = 190(L)×15(D)mm ; 7.5(L)×0.6(D)inch

Accessories : Instruction Manual, 9V Battery, Carrying Case, Probe Holder, K type bead thermocouple probe.

IV. Symbol Definition and Button Location:



℃℉ : Centigrade and Fahrenheit indication.

%RH : Relative Humidity indication.

MAX : The Maximum value is now being displayed

MIN : The Minimum value is now being displayed

: This indicates auto power off is enabled.

: This indicates that the display data is being held.

m-d : month and day

h:m : hour and minute

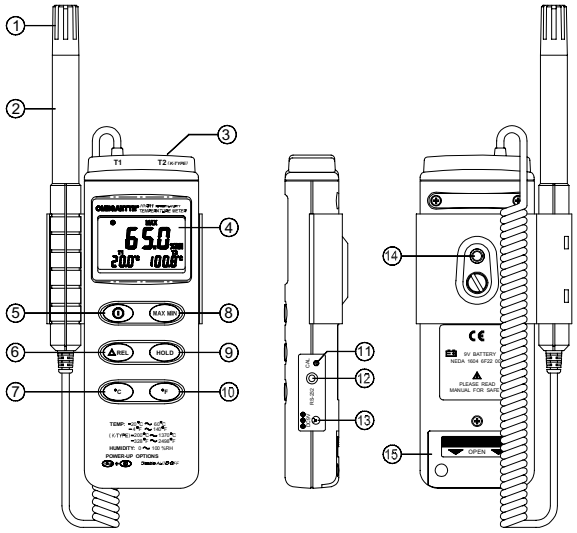
m:s : minute and second

Y : year

: The Battery is not sufficient for proper operation.

K : Thermocouple type indication.

△REL : The reading is now under relative mode.



Button Location:

① Dust mask
② Sensor probe
③ T2 channel, “K” type thermocouple probe input
④ LCD display
⑤ ON/OFF button
⑥ REL button
⑦ °C control button
⑧ MAX MIN function control button
⑨ HOLD button
⑩ °F control button
⑪ K type offset calibration screw
⑫ Digital output connector (RS-232)
⑬ AC power adapter connector
⑭ Tripod connector
⑮ Battery cabinet cover

V. Operation Instructions:

4.1 Power-Up

Press the power button to turn the Humidity Temperature Meter ON or OFF.

4.2 Humidity and Temperature Measurement

For measurement, place the sensor probe in the tested environment.

4.3 Connection the Thermocouples (T2 channel)

For measurement, plug the thermocouple probe into the input connector.

4.4 Selecting the Temperature Scale

When the meter is first powered on, the default scale setting is set at Celsius (°C) scale. The user may change it to Fahrenheit (°F) by pressing “ **°F** ” button and vice versa to Celsius by pressing “ **°C** ” button.

4.5 Data-Hold Operation

The user may hold the present reading and keep it on the display by pressing the “**HOLD**” button. When the held data is no longer needed, one may release the data-hold operation by pressing “**HOLD**” button again.

When the meter is under Data Hold operation, the **"MAX MIN"** and “ **°C** “ “ **°F** ” “ **△REL** ” button are disabled. (when you press “ **°C** “ “ **°F** ” “ **△REL** ” and **"MAX MIN"** button in HOLD mode, there will be two continuous beeps)

To exit the MAX/MIN mode, one may press and hold "MAX MIN" button for two seconds.

4.6 MAX/MIN Operation:

When pressing the "MAX MIN" button, the meter will enter the MAX/MIN mode. Under this mode the maximum value, minimum value is kept in the memory simultaneously and updated with every new data.

When the MAX symbol is display, the Maximum is shown on the display.

Press "MAX MIN" again, then the MIN symbol is on the display and also the minimum reading.

Press "MAX MIN" again, MAX, and MIN will blink together. This means that all these data is updated in the memory and the reading is the present temperature.

One may press "MAX MIN" to circulate the display mode among these options.

When the meter is under "MAX MIN" operation, " **°C** " " **°F** " " △**REL** " button are disabled.(when you press " **°C** " " **°F** "" △**REL** " button in "MAX MIN" mode, there will be two continuous beep)

To exit the MAX/MIN mode, one may press and hold "MAX MIN" for two seconds.

4.7 Relative Operation:

When pressing the" △**REL** " button, the meter will memorize the present reading and the difference between the new reading and the memorized data will be shown on the display, Press the " △**REL** " button again to exit the Relative operation. When the meter is under relative operation, " **°C/°F** " button is disabled. (when you press " **°C** " " **°F** " button in relative mode , there will be two continuous beep)

4.8 Auto Power Off:

By default, when the meter is powered on, it is under auto power off mode. The meter will power itself off after 30 minutes if no key operation and no RS232 communication.

Combination at power on can disable auto power off.

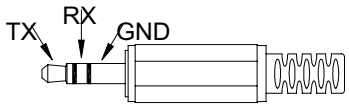
One may press and hold "**HOLD**" button and then power on the meter and there will be two successive beeps to indicate that auto power off is disabled and the will not show up.

4.9 Low Battery Condition

When the battery voltage is under proper operation requirement, the symbol will show on the LCD and the battery need to be replaced with new one.

4.10 Digital Output:

The Digital Output is a 9600bps N 81 serial interface.



WARNING!

1.Don't touch or manipulate the sensor.
2.Don't expose the sensor to direct light , this causes a false reading.
3.Don't expose the sensor to static electricity.

Appendix: Thermo couple probe specification

Model	Range	Tolerances	Description
SC-TT-K-30-36 Bead probe	-50℃ to 200℃ -58℉ to 392℉	±2.2℃ or ±0.75% (±3.6℉ or ±0.75%)	with Teflon tape insulation Maximum insulating temperature : 260℃

SC-TT-K-30-36 :
probe for general condition measurements, especially for complex and hard to reach places.