HYGROMETERS FOR HUMIDITY MEASUREMENT

In many manufacturing processes the measurement of relative humidity (%rh) is important, as many products are sensitive to variations in humidity. Therefore humidity needs to be measured and controlled for the end products to be consistent in both quality and performance.

WHAT IS A HYGROMETER?

A hygrometer is an instrument used to measure the quantity of water vapour present in air. Hygrometers can measure relative humidity over the range of 0 to 100 %rh but in most instruments, this range may be more limited depending on the sensor type. Relative humidity is expressed as the ratio of the amount of water vapour present in the air or gas, to the quantity which would reach saturation, saturation being 100 %.

APPLICATIONS

There are a wide range of applications for %rh measurement in the following industries:

- Pharmaceutical
- Paper mills
- Computer rooms
- Healthcare
- Livestock
- Food processing
- Building & Construction
- Electronics production

The pharmaceutical industry is one of the largest users of humidity instrumentation as products can be sensitive to variations in humidity levels. Food manufacturing processes rely on humidity control, as food preservation techniques are often focused on limiting the activity of water.

The humidity is an essential element of climate control in buildings for optimum comfort and energy conservation. Paper and paper based products are highly sensitive to humidity and moisture levels. During production, storage and distribution, the monitoring of humidity can have significant benefits on quality.

MONITOR HUMIDITY LEVELS FOR BETTER HEALTH

If a building is too damp and the humidity level is too high (above 70 %rh), not only does mould develop but it can encourage dust mites to breed in carpets and mattresses. Conversely, if the humidity level is too low (below 25 %rh), it can cause respiratory discomfort. The regular monitoring of humidity levels in buildings can improve health

DEW POINT

The dew point is defined as the lower temperature to which air must be cooled in order for condensation (saturation) to occur. The dew point is dependent on the concentration of water vapour (%rh) present.

UKAS CERTIFICATES OF CALIBRATION

Our in-house UKAS calibration laboratory offers certification for both temperature and humidity instruments. Each certificate indicates deviations from standards at various temperature or humidity check points. See pages 105 and 106 for more information.

6000 SERIES THERMA-HYGROMETERS

- High accuracy ±2 %rh & ±1 °C
- Remote or integral %rh & temperature probe
- Displays max/min humidity or temperature
- Optional backlit display

The 6000 series therma-hygrometers are easy to use, relative humidity and air temperature measuring instruments. The units measure %rh over the range of 0 to 100 %rh with a resolution of 0.1 %rh and temperature over the range of -20 to 70 °C (-20 to 50 °C with a fixed probe) with a resolution of 0.1 °C.

The therma-hygrometers incorporate a custom LCD, displaying %rh, °C/°F, dew point indication, max/min and hold. There is an automatic display of both open circuit and low battery. The 6000/6100 display the temperature and humidity at the push of a button separately, whereas the 6002/6102 display humidity and temperature simultaneously and additionally incorporates a backlit display.

All units are powered by three AAA batteries with a minimum life expectancy of 10000 hours. An auto-power off facility turns the therma-hygrometer off automatically after ten minutes, maximising battery life.
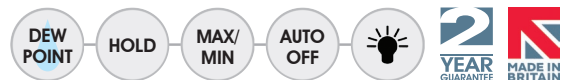
- **6100/6102 therma-hygrometers with remote probe**
  These therma-hygrometers utilise an interchangeable probe that incorporates a one-metre lead with a 6-pin Lumberg connector.

- **Optional UKAS Certificate of Calibration**
  An optional three-point UKAS Humidity Calibration Certificate is available at a preferential price when purchased with these units.

UKAS CALIBRATION 0601

- **Protective silicone boot (830-227)**
  The Therma series is splashproof to IP64 when used in conjunction with this boot. Various colours are available - see page 13 for details

DEW POINT | HOLD | MAX/MIN | AUTO OFF | 2 YEAR GUARANTEE | MADE IN BRITAIN

Order code	Description
224-600	6000 therma-hygrometer
224-610	6100 therma-hygrometer
224-602	6002 therma-hygrometer
224-612	6102 therma-hygrometer
224-615	6100/6102 spare probe
830-227	Protective silicone boot - black
890-111	*UKAS 3-point Certificate
6100/6102 are supplied inclusive of probe	
***Price when purchased with a new instrument**	

Specification	Temperature	Humidity
Range - 6000/6002	-20 to 50 °C	0 to 100 %rh
Range - 6100/6102	-20 to 70 °C	0 to 100 %rh
Resolution	0.1 °C/°F	0.1 %rh
Accuracy	±1 °C ±1 digit*	±2 %rh (10 to 90 %rh)
Hysteresis	N/A	±1 %rh
Sensor type	Silicon bandgap	Capacitance polymer
Battery & life	3 x 1.5 volt AAA - 10000 hours	
Display	12 mm LCD	
Dimensions	25 x 56 x 128 mm	
Weight	130/160 grams	
***Accuracy ±0.4 °C over the range 10 to 40 °C otherwise ±1 °C**		

6500 THERMA-HYGROMETER

- High accuracy ±3 %rh & ±1 °C
- Remote %rh & temperature probe

The 6500 therma-hygrometer measures both relative humidity and air temperature. The clear, easy to read LCD displays %rh over the range of 0 to 100 %rh with a resolution of 0.1 %rh and temperature over the range of -20 to 70 °C with a resolution of 0.1 °C.

The unit incorporates a custom LCD with %rh, °C/°F, dew point indication, max/min and hold. An auto-power off facility turns the therma-hygrometer off automatically after ten minutes, maximising battery life.

The 6500 therma-hygrometer incorporates four, easy to use, push buttons allowing the user to select on/off, hold, max/min and mode functions. Each unit is supplied with a remote sensor and integral PVC lead.

Order code	Description
224-655	6500 therma-hygrometer
830-227	Protective silicone boot - black
890-111	*UKAS 3-point Certificate
*Price when purchased with a new instrument	

Specification	Temperature	Humidity
Range	-20 to 70 °C	0 to 100 %rh
Resolution	0.1 °C/°F	0.1 %rh
Accuracy	±1 °C ±1 digit*	±3 %rh (20 to 80 %rh)
Hysteresis	N/A	±1 %rh
Sensor type	Silicon bandgap	Capacitance polymer
Battery & life	3 x 1.5 volt AAA - 10000 hours	
Display	12 mm LCD	
Dimensions	25 x 56 x 128 mm	
Weight	185 grams	
*Accuracy ±1 °C over the range 5 to 45 °C otherwise ±1.7 °C		

DIAL HYGROMETER
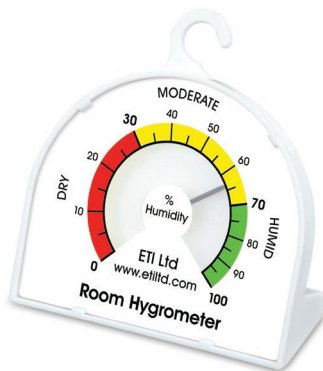
The general purpose hygrometer incorporates a 70 mm diameter dial with arrow indicator and colour-coded zones to display humidity levels e.g. dry, moderate and humid. The hygrometer indicates the level of humidity in 5 % divisions over the range of 0 to 90 %rh.

The unit is housed in an ABS case, measuring 70 x 60 mm and can be free-standing or hung by the hook from a shelf.

Order code	Description
800-125	Dial hygrometer - room

POCKET HYGROMETER

The pen-shaped hygrometer simultaneously displays both humidity and temperature over the range of 20 to 95 %rh and 0 to 49.9 °C.

The hygrometer incorporates a max/min button which allows the user to display the maximum and minimum humidity and temperature simultaneously.

The unit is housed in a slim, ABS case measuring 20 x 23 x 130 mm and incorporates a pocket clip.

Order code	Description
810-190	Pen-shaped hygrometer

THERMA-HYGROMETER - COMFORT

- Displays both humidity & temperature
- Helps maintain a healthy living & work environment

These therma-hygrometers display both the humidity and temperature in addition to indicating and recording the maximum and minimum readings. Each unit features an analogue arrow indicator and a colour-coded bar to display either humidity comfort levels e.g. dry, comfort and wet (810-130) or temperature comfort levels eg. cold, comfort and hot (810-135).

These therma-hygrometers are ideal for monitoring both temperature and humidity in rooms, offices, factories and similar to ensure optimum environmental conditions are maintained.

Each unit is housed in an ABS case, measuring 20 x 100 x 110 mm, that incorporates a useful foldaway stand and a keyhole slot for hanging on a wall.

Order code	Description
810-130	Therma-hygrometer
810-135	Comfort thermometer

Specification	Temperature	Humidity
Range	0 to 50 °C	10 to 99 %rh
Resolution	0.1 °C/°F	1 %rh
Accuracy	±1 °C	±5 %rh (30 to 70 %rh)
Battery & life	2 x 1.5 volt AAA - 10000 hours	
Display	Dual custom LCD	
Dimensions	20 x 100 x 110 mm	
Weight	142 grams	

THERMA-HYGROMETER - ALARM

- Integral %rh & remote temperature probe
- Large LCD with max/min & alarm functions

This therma-hygrometer simultaneously displays both the humidity and temperature in addition to indicating and recording the maximum and minimum readings.

The instrument measures both humidity and temperature over the range of 0 to 49.9 °C and 20 to 99 %rh via the internal sensors. Using the external temperature sensor the temperature range is extended to -49.9 to 69.9 °C.

The unit features a temperature alert alarm that will sound when the external remote temperature probe indicates the temperature is 0 °C or below. This feature is ideal for frost/freeze alert in horticulture and similar.

The unit is housed in an ABS case, measuring 20 x 65 x 97 mm, that incorporates a useful foldaway stand and a keyhole slot for hanging on a wall.

Remote probe

Order code	Description
810-155	Therma-hygrometer - alarm

Specification	Temperature	Humidity
Range - internal	0 to 49.9 °C	20 to 99 %rh
Range - external	-49.9 to 69.9 °C	N/A
Resolution	0.1 °C/°F	1 %rh
Accuracy	±1 °C	±5 %rh
Sensor type	Thermistor	Capacitance
Battery & life	1.5 volt AAA - 10000 hours	
Display	Dual custom LCD	
Dimensions	20 x 65 x 97 mm	
Weight	70 grams	

MAX/MIN

HUMIDITY

THERMA-HYGROMETER

- Max/min temperature & humidity function
- Integral %rh & temperature

This therma-hygrometer simultaneously displays both the humidity and temperature in addition to indicating and recording the maximum and minimum temperature and humidity readings.

The hygrometer measures both humidity and temperature over the range of 0 to 50 °C and 10 to 99 %rh utilising the internal sensors. A comfort icon is displayed to show if the surrounding atmosphere is dry, just right or too wet.

This therma-hygrometer is ideal for monitoring both temperature and humidity in rooms, offices, factories and similar to ensure optimum environmental conditions are maintained.

The unit is housed in an ABS case, measuring 20 x 100 x 110 mm, that incorporates a useful foldaway stand and a keyhole slot for hanging on a wall.

Order code	Description
810-145	Therma-hygrometer

Specification	Temperature	Humidity
Range	0 to 50 °C	10 to 99 %rh
Resolution	0.1 °C/°F	1 %rh
Accuracy	±1 °C	±5 %rh (30 to 70 %rh)
Battery & life	1.5 volt AAA - 10000 hours	
Display	Dual custom LCD	
Dimensions	20 x 100 x 110 mm	
Weight	135 grams	

THERMA-HYGROMETER - PANEL MOUNTING

- Displays both humidity & temperature
- Easy panel-mounting installation

This panel-mounted therma-hygrometer simultaneously displays both humidity over the range of 20 to 99 %rh and temperature over the range of 0 to 49.9 °C with a resolution of 1 %rh and 0.1 °C. This instrument is ideal for OEMs for installing into equipment, i.e. vivariums, incubators and similar.

The therma-hygrometer is easily installed into a panel via a mounting hole with a minimum Ø33 mm cut-out. The unit incorporates a screw clamp with a maximum panel thickness of 7 mm.

The therma-hygrometer features a max/min memory function for both temperature and humidity. The unit is powered by a CR2032 coin cell battery with a life expectancy of 5000 hours continuous use.

Panel-mounting

Order code	Description
810-180	Therma-hygrometer - panel

Specification	Temperature	Humidity
Range	0 to 49.9 °C	20 to 99 %rh
Resolution	0.1 °C	1 %rh
Accuracy	±1 °C	±5 %rh
Sensor type	Thermistor	Capacitance
Battery	3 volt CR2032 lithium coin cell	
Battery life	5000 hours	
Display	Dual custom LCD	
Dimensions	Ø50 x 41 mm	
Weight	42 grams	

HUMIDITY

THERMA-HYGROMETER - WITH PROBE

- Displays both humidity & temperature
- Large, easy to read LCD display

The therma-hygrometer simultaneously displays both the humidity and temperature in addition to indicating and recording the maximum and minimum readings.

Using the external remote probe with integrated three metre lead the unit measures both temperature and humidity over the range of -20 to 70 °C and 10 to 99 %rh. Alternatively using the internal sensor the unit measures temperature over the range of 0 to 50 °C.

This therma-hygrometer is ideal for monitoring both temperature and humidity in rooms, offices, factories and similar to ensure optimum environmental conditions are maintained.

The unit is housed in an ABS case, measuring 20 x 100 x 110 mm, that incorporates a useful foldaway stand and a keyhole slot for hanging on a wall.

Remote probe

Order code	Description
810-140	Therma-hygrometer - with probe

Specification	Temperature	Humidity
Range - internal	0 to 50 °C	N/A
Range - external	-20 to 70 °C	10 to 99 %rh
Resolution	0.1 °C/°F	1 %rh
Accuracy	±1 °C	±5 %rh (30 to 70 %rh)
Battery & life	1.5 volt AAA - 10000 hours	
Display	Dual custom LCD	
Dimensions	20 x 100 x 110 mm	
Weight	170 grams	

THERMA-HYGROMETER - WITH PROBE

- Remote %rh & temperature probe
- Frost/freeze audible alarm feature

This therma-hygrometer simultaneously displays both the humidity and temperature in addition to indicating and recording the maximum and minimum readings.

Utilising the internal sensor the instrument measures temperature over the range of 0 to 49.9 °C. The external remote probe with integrated three metre lead measures both temperature and humidity over the range of -49.9 to 69.9 °C and 20 to 98 %rh.

The unit features a temperature alert alarm that will sound when the external remote probe indicates the temperature is 0 °C or below. This feature is ideal for frost/freeze alert in horticulture and similar.

The therma-hygrometer is housed in an ABS case measuring 18 x 41 x 76 mm, that incorporates a foldaway stand. Each unit is supplied with a probe wall bracket.

Remote probe

Order code	Description
810-195	Therma-hygrometer - with probe

Specification	Temperature	Humidity
Range - internal	0 to 49.9 °C	N/A
Range - external	-49.9 to 69.9 °C	20 to 98 %rh
Resolution	0.1 °C/°F	1 %rh
Accuracy	±1 °C	±5 %rh @ 25 %rh
Sensor type	Thermistor	Capacitance
Battery & life	1.5 volt AAA - 10000 hours	
Display	Dual custom LCD	
Dimensions	18 x 41 x 76 mm	
Weight	90 grams	

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