



Humidity Measurement Bench H814



- ***Allows Investigation of Different Methods of Humidity Measurement.***
- ***Fundamental for the Study of Air Conditioning and Plant Engineering (Cooling Towers).***
- ***May Be Used In Conjunction With Hilton H813 Dew Point Hygrometer.***
- ***Optional Electronic Transducer and Optional Data Acquisition.***
- ***Two Year Warranty.***



Introduction

The Hilton H814 Humidity Measurement Bench allows students to investigate the methods available for the measurement of humidity. This is often a difficult concept for students to understand but is fundamental for the study of air conditioning and evaporative cooling methods (e.g. cooling towers).

The unit is bench mounted and self-contained. The Hilton H814 Humidity Measurement Bench will provide interesting and instructive experimental work for students of all disciplines and particularly those studying.

- **Air Conditioning**
- **Refrigeration**
- **Chemical Engineering**
- **Mechanical Engineering**
- **Plant and Process Engineering**
- **Physics**

Experimental Capabilities

- Investigation Of Different Types Of Humidity Measurement Device.
- Investigation Of The Effects Of Air Velocity On Wet Bulb Temperature
- The Use Of Wet And Dry Bulb Measurement And The Concept Of Relative Humidity, Specific Humidity And Vapour Pressure.
- Investigation Of Electronic Humidity Sensors.

Description

A self contained bench top unit comprising a number of different types of humidity meters and a small air duct with fan for variation of air velocity together with a simple air velocity meter.

Students can investigate the use of the standard wet and dry bulb whirling hygrometer in the normal way. Using the air duct the effect of air velocity on wet bulb temperature can be investigated.

The wet and dry bulb method can be compared with a direct reading psychrometer, hair hygrometer, a synthetic material hygrometer and an electronic humidity sensor.

All of the measured parameters can be related using the large encapsulated psychrometric chart that is supplied and by detailed calculation.

The manual supplied, contains suggested experimental procedures, sample test results and detailed calculation examples based upon the sample results.

A small steam humidifier is supplied in order to enable students to simply adjust the humidity seen by the various sensor types.

Addition of the optional Digital Temperature Wet and Dry Bulb H814A allows students to investigate the wet and dry bulb measurement method in greater detail and accuracy.

Addition of the optional Data Acquisition System HC814A (together with H814A) allows students to record the effects of air velocity on the wet and dry bulb and to record the natural variations in humidity over extended periods. The data acquisition system also allows graphical display of the effects of adding humidity artificially (e.g. steam or wet material) to the air duct.

The 35 channel data acquisition system and user configurable software may also be disconnected from the unit and used with any suitable transducer for data collection on any other Hilton or non-Hilton equipment.

Specification

Humidity Measurement Bench

Comprising:

A self contained unit with two electronic humidity sensors and three analogue sensors. These include direct reading psychrometer, hair hygrometer, synthetic material hygrometer, capacitive sensor hygrometer with temperature measurement, and whirling (centrifugal) wet and dry bulb sensor.

An air duct and fan and simple air velocity meter allows the effect of air velocity to be investigated.

An optional digital temperature wet and dry bulb sensor is available.

An optional 35 channel data acquisition system and software is available for use with the optional digital temperature wet and dry bulb sensor and any other compatible transducers.

Safety

The air fan is fitted with a double pole combined overload cut out and main switch. All metal parts are connected to a common earth conductor.

Dimensions

Height: 650mm Depth: 300mm
Width: 900mm Weight: 30kg



Accessories and Spares

Unit supplied with:

One experimental operating and maintenance manual
in English, Spanish, French.

Accessories and spares, suitable for 2 years normal
operation. List available on request

Services Required

Electrical: A 220-240 Volts, Single Phase, 50Hz
(With Earth/ground).

Or

B: 110-120 Volts, Single Phase, 60Hz
(With earth/ground).

Ordering Information

Order as: Humidity Measurement Bench H814

Digital Temperature Wet and Dry
Bulb H814A

Optional Data Acquisition System
HC814A

Electrical Specification

Either: **A:** 220-240 Volts, Single Phase
50Hz (With earth/ground).

B: 110-120 Volts, Single Phase
60Hz (With earth/ground).

Language

Either: English, Spanish, French.

Also Available On Request

Further detailed specification.

Additional copies of instruction manual.

Recommended list of spares for 5 years operation.

P.A.HILTON Ltd.

Horsebridge Mill, King's Somborne,
Stockbridge, Hampshire, SO20 6PX, England.



Telephone: National (01794) 388382
International +44 1794 388382

Fax: National (01794) 388129
International +44 1794 388129

E-mail: sales@p-a-hilton.co.uk
Website: www.p-a-hilton.co.uk

