

## Humor 20 High Precision Portable “Two Pressure” Humidity Calibrator



The Humor 20 is a portable calibration device based on the primary “two pressure” calibration method utilized and proven at National Institute Of Standards & Technology (NIST). The Humor 20 is specifically designed for the calibration requirements of pharmaceutical, biotech, food processing and electronics industry where accurate, reproducible and documented humidity calibrations are needed. Its portability and unique design allows for fast, multi point, in-place, loop calibrations to be performed at the humidity sensor location. The Humor 20 is manufactured by E+E Elektronik one of the leading humidity sensor manufacturers in Europe (ISO 9001).

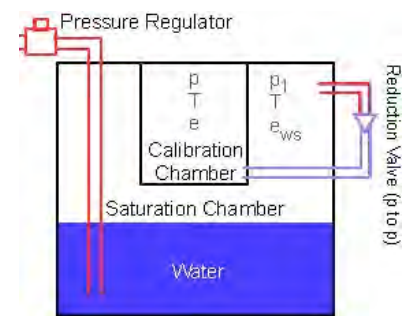
### Key Features

- ✓ Accuracy greater than  $\pm 1\%$  over a range of 10% to 95% RH.
- ✓ Change of humidity conditions will stabilize in 30 seconds facilitating rapid multi-point calibrations.
- ✓ Accommodates all types and makes of probe sensors and most wall-mounted designs.
- ✓ Unique chamber-within-chamber design ensures uniform temperature conditions and fast stabilization between humidity settings.
- ✓ Calibrations traceable to a number of National Laboratories are available including NIST (USA), OKD (Austria) and PTB (Germany).
- ✓ PC Interface & Software provides a printout of calibrations protocols including specimen number, calibration date and reference and actual values.
- ✓ Operates in any environment 50 to 104°F (10-40°C)

### Operational Principal

The operation of the Humor 20 is based on a fundamental two–pressure process utilized as a primary reference by NIST and other recognized calibration laboratories.

High-pressure air or nitrogen is supplied to a primary chamber that contains water saturated to 100% rh. A second chamber used for calibration is located inside the saturation chamber and ensures that both chambers are at the same temperature at all times. By eliminating the temperature differences, the partial pressure of water vapor in the two chambers is reduced at the same ratio as the pressure between the two chambers. The desired humidity levels can then be adjusted in the calibration chamber by adjusting the pressures between the two chambers.



## Practical Software Tools

The software included with the Humor 20 allows the user to print out calibration protocols, record measurement values in a log file and to configure or readjust the Humor 20.

### Measurement Software Features

Creation and print out of clear, professional calibration protocols with:

- ⇒ Specimen number
- ⇒ Calibration date
- ⇒ Reference and actual measured values

### Configuration Software Features

- ⇒ Select °F or °C on Humor 20 display
- ⇒ 1-point customer humidity calibration
- ⇒ 6 point customer humidity calibration
- ⇒ 1 point customer humidity calibration
- ⇒ Reset of Humor 20 to factory calibration

## Accessories

### Covers For Measurement Chamber

The Humor 20 comes with a chamber cover that can accommodate two sensors with a diameter of 12 mm. Additional covers for other diameters are as follows:

Probe Diameter (mm)	Number Of Calibration Ports	Order No
8 - 12 mm	3	HA 02 02 04
12 - 16 mm	2	HA 02 02 01
16 - 20.5 mm	1	HA 02 02 02
20.5 - 25.5 mm	1	HA 02 02 03

### Compressor With Oil Separator

AirTest offers a quite portable compressor that can supply pressures up to 12 bar and operates on 110 VAC.

Order No: HA 01 02 01

### Calibration Certification

The Humor 20 is supplied with a factory calibration certificate according to DIN EN 10204-2.3. Calibration at recognized laboratories such as OKD (Austria), PTB (Germany) and NIST are also available.

## Other Humidity Measurement Product

In addition to the Humor 20 calibrator, AirTest offers a broad range of humidity measurement products manufactured by E+E Elektronik for HVAC, meteorological, process control and low dew point measurement applications. It also offers a special line of sensors targeted at the needs of the Biotech and Pharmaceutical industries. E+E is one of the leading humidity sensor manufacturers in Europe where its foundation is as a sensor supplier to the automotive industry where accuracy, long term stability, rugged design, environmental durability and the highest levels of quality are critical.

Distributed By:

**Global Controls, Inc.**  
3008-B 16th Avenue West Seattle, WA 98119-2029  
Phone : (206) 282 - 4666 Toll Free : (800) 821 - 4863  
Fax : (206) 282 - 4888 E-Mail : [info@global-controls.net](mailto:info@global-controls.net)  
<http://www.global-controls.net>

## Specifications

### General

**Operating Principal:** two-pressure-reactor

**Power Supply:** 90 – 230 VAC

**Pressure Source:** compressed air, filtered and free of oil or nitrogen (either with max 10 bar)

**Moisture Source:** distilled water

**Stabilization Time Humor 20:** < 3 min/measuring point

**Stabilization Time Specimen:** typ. 20 min/measuring point

**Integrated Power Supply:** 24 VDC, max 200 mA

**No Of Measurement Inputs:** 2 switchable between 4-20mA, 0-20mA, 0-1 V, 0-5V, 0-1V.

**Typical Error for Display Inputs:** Voltage measured < 5 mV, Current measured < 30uA

**Display:** Dot matrix display with backlight

**Gas Flow:** 3 l/min. for RH > 85% the gas flow is reduced to 1.5 l/min at 95% RH

**Recommended Calibration Interval:** 1 year

**PC Interface Software:** RS232, MS Windows® 98, ME, NT with SP 6a, 200 with SP 2, XP

**Environmental Conditions:** temperature:50-104°F (10-40°C), Humidity: 10-80% RH

**Applied Harmonized Standards:** 61000-6-2, EN 61010-1, EN 61000-6-3, EN 6100-6-4, EN 60068-2-8, EN EN 60068-2-29, OEVE EN 61326-1+A1+A2

**Dimensions:** 15.75 X 10.25 X 9.5" (400 X 260 X 240 mm)

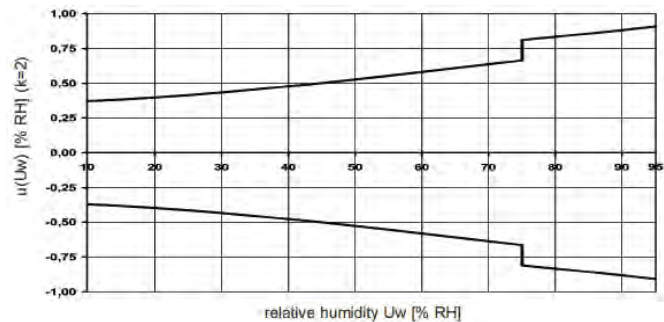
**Weight:** 50.7 lbs (23 kg), with packaging 80.5 lbs (36.5 lbs)

### Accuracy

**Temperature Measurement in Calibration Chamber:**

typ.±5°F (±0.3°C)

**Humidity:**



**AirTest™ Technologies Inc.** specializes in the application of cost effective, state-of-the-art gas monitoring technology to ensure the comfort, security, health and energy efficiency of buildings.

**AirTest™**  
Sensors That Make Buildings Smart™

Specifications Subject To Change Without Notice

10/29/03