

# Humiwell

Relative Humidity Calibrator

*Accurately  
Calibrate Humidity  
Sensors*

***MicroStep-MIS***

solutions for the real world

# Humiwell

## Relative Humidity Calibrator

### FEATURES:

- Calibration laboratory in one device
- Compatibility with various sensors
- Compact & portable



Humiwell is a Relative Humidity Calibrator developed by MicroStep-MIS. It is everything you need to accurately calibrate your humidity sensors. Whether you use it as a benchtop device or take it to the field, Humiwell is always ready to deliver the highest accuracy just in a few moments.

### Calibration laboratory in one device

Humiwell contains internal humidity and temperature probe, which can be used as a reference in a mobile calibration laboratory.

### Highest standards calibration laboratory

Humiwell works well with chilled mirror reference hygrometers, providing fundamental measurement and low uncertainty down to 1 % RH. The temperature stabilized chamber with mixing fan provides wide range of temperature and humidity conditions for your precise calibration.

### Measure temperature dependence

Thanks to four independently regulated Peltier elements the chamber temperature is not only stable and homogenous, but you can also set various target temperatures. Therefore the performance of calibrated sensors at other temperatures can be measured.



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### Fast & Easy setup

Intuitive color touch-screen display makes it easy to set-up a quick test in the field. In the lab, the best use is with the IMS4 CalibLab software, which provides full automation of the calibration process.

### Reading the sensors values

Humiwell fits various types of hygrometers into temperature controlled chamber. Up to 6 probes can be calibrated at a time. Humiwell features readout for the probes with analog inputs and TTL, SDI-12, RS-232 or RS-485 serial lines.

### External reference readout

One RS-232 input in the back of Humiwell is dedicated to connecting of the external chilled mirror reference.

### Automatic calibration and adjustment

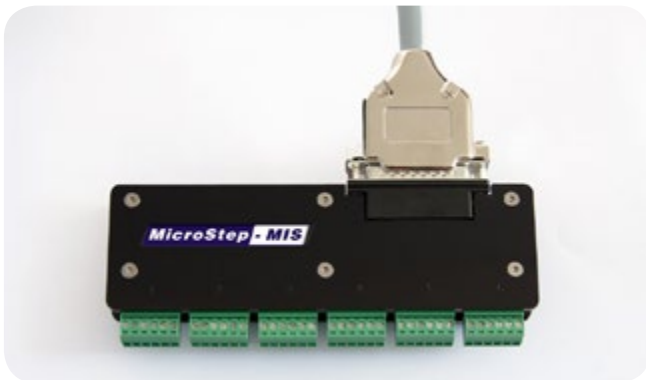
In certain environments the humidity sensors are subject to fast degradation. It is often sufficient to replace the sensing element and run automatic adjustment and calibration process. It can be fully automatic with Humiwell and IMS4 CalibLab. Sensors from other manufacturers than MicroStep-MIS are supported.

### Remote access

Monitor and control the calibration process from your office. Connect Humiwell via ethernet and check the calibration progress

### Room conditions monitoring

Humiwell features also extra sensors for ambient conditions monitoring during the calibration. With IMS4 CalibLab software, the values of pressure, relative humidity and temperature automatically get to the calibration certificate.



External read-out card for convenient probes connection. Supports Analog input, SDI-12, RS-232, RS-485 & others.



Desiccant cartridge. Easy to replace.

### Regulator algorithm

Sophisticated regulator algorithm for temperature and relative humidity provides fast response, high stability and prevents condensation forming in the chamber at any time.

### Clean and reliable humidity generator

Humiwell does not use any chemicals or salts, just distilled water and desiccant. When compared with saturated salt solutions, Humiwell reaches the setpoint faster and more reliably. It is not sensitive to ambient temperature stability and can generate any of the relative humidity and temperature in the range at a command.

### Reference sensor

Chilled mirror hygrometer (optional). Humiwell is designed to employ an external dew-point mirror sensor as a reference. This option gives the user a high level of confidence in measurement results thanks to lowest possible measurement uncertainty. There is a RS-232 port dedicated for reference connection at the rear panel of Humiwell. This reduces number of PC ports required the lab PC.

### Calibrated sensors

Standard chamber door fits up to 6 probes of round cross-section, with maximum diameter 25 mm. Door ports can be easily replaced for different probe diameters. Humiwell optionally features readout card with six inputs for sensors. The outputs are analog voltage, SDI-12 and 5 V UART

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compatible. RS-232, RS-485 and other buses may also be specified. The readout card connects to the rear panel of Humiwell. It solves the question how to read the calibrated sensor values during calibration. It also saves space and reduces the number of lab PC ports.

### Color touch-screen display

A 5-inch LCD enables a simple operation and status check. You can set a desired setpoint and check the course of values in the chamber.

### Connectivity

Humiwell has ethernet and RS-232 ports as a standard. These enable remote control of the device, or even the whole calibration thanks to the fact, that calibrated sensors and reference can all be connected to Humiwell. All the data is available for the PC software.

### Chamber

Total volume	2.8 l
Diameter	160 mm
Total Depth	140 mm
Homogenisation	variable speed fan
Number of calibrated sensors	6
Max. Ø of calibrated sensor	25 mm

### Relative humidity control

Method of generation	Temperature controlled saturator and desiccant
Range	5 to 95 % RH
Stability	better than 0.1 % RH
Feedback sensor	solid state capacitive polymer
Feedback sensor accuracy	1 % RH, optional: 0.8 % RH
Condensation prevention algorithm	yes

### Temperature control

Method of generation	4 Thermoelectric Peltier cells
Range	-10 to 60 °C
Stability	better than 0.05 °C
Feedback sensor	pt-100
Feedback sensor accuracy	better than 0.1 °C
Chamber homogeneity	better than 0.1 °C



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### Communication ports

Reference	RS-232
Calibrated sensors	analog voltage 0 to 2.5 V, SDI-12, 5 V UART
Remote communication	Ethernet, RS-232
Baud rate all serial ports	adjustable
Protocol	ASCII

Delay between characters is not required.

### Mechanical

Dimensions	35 cm x 24 cm x 43 cm
Weight	13 kg (approximately)
Transport box	Hard case
Dimensions	51 x 35 x 62 cm
Weight	10 kg (approximately)

### Electrical

Supply voltage	100 to 240 V AC
Max. supply power	300 W

### Consumables

Desiccant  
Distilled water

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