KIMO INSTRUMENTS

Technical Data Sheet

Pressure • Temperature • Humidity • Air Velocity • Airflow • Sound level

Nouveau

CE

EHK 500

Standard portable instrument

- *Ranges from 3 to 98%RH and -20 to +80°C*
- *RS 232 communication with classes 200 and 300 humidity transmittter*
- *Tight chamber for calibration*
- *Intuitive menu with scroll wheel button*
- *Ergonomic housing with elastomer protection*
- *Display up to 5 parameters*
- *Display of calibration date*

Housing features

Housing.....Shock-proof in ABS/PC with sides made of elastomer
Fire class.....HB selon UL 94
Dimensions.....176 x 78 x 35 mm
IP code.....IP40
Display.....graphic with backlight Display of 1 to 5 parameters.
Screen dimensions.....48 x 24 mm
Keypad.....elastomer with 4 tkeys and 1 scroll wheel button
Weight.....400 g

Technical features

Power supply.....4 alkaline batteries 1,5 V LR6
Electromagnetical compatibility.....EN 61 326
Communication.....RS 232
Connectors.....overmolded mini-DIN with keying system
Digital output connexion.....USB
Working temperature.....from 0 to +50°C
Storage temperature.....from 0 to +50°C
Environment.....air and neutral gases
Languages.....French, English, Spanish, Portuguese, Italian, German, Dutch

HYGROMETRY PROBE :
Guarantee Accuracy Limits* :

EMG (GAL) = ±2.70 %RH between 18 and 28°C (normal measurement range)

Measuring range : from 3 to 98%RH
Short-term drift : better than 1%RH / year
Response time : 10 seconds

* EMG = Et + Ehl + k ($uet^2+ur^2+ud^2+us^2$)1/2
As per Charter 2000/2001 Hygrometers with :
uet : uncertainty of calibration = ± 0.55%RH
ur : uncertainty of resolution = ± 0.003%RH
ud : manufacturing dispersion = ± 0.17%RH
us : comparison repeatability = 0.11%RH
Et : temperature coefficient error = ± 0.28%RH
Ehl : linearity and hysteresis = ± 1.25%RH
k : coverage factor value = 2%RH

Technical features of the sensor

Humidity

Measuring range.....from 3 to 98 %RH
Measuring units.....% RH, g/kg
Accuracy *.....±1% of the reading ±1.5 %RH
Response time (of measuring element).....<10 sec. (from 10% RH to 80%HR, V_{air}=2m/s)
Resolution.....0,1 %RH
Sensor type.....capacitive
Fluid Type.....air and neutral gases
Resistance to gas.....air and neutral gases

Temperature

Measuring range.....from -20 to +80°C (ambient temp.) from -100 to +400 °C (Pt100 probe)
Measuring unit.....°C, °F
Accuracy *.....±2% of the reading ±0.1°C
Response time (of measuring element)..... $t_{0,9}$ = 9 sec. for V_{air} = 1 m/s
Resolution.....0.1°C
Sensor type.....Pt 100 class A
Fluid type.....air and neutral gases

*All accuracies indicated in this document were stated in laboratory conditions and can be guaranteed for measurements carried out in the same conditions, or carried out with calibration compensation.

Functions

Features / Functions	Measuring units	Measuring ranges	Accuracy *	Resolutions
Relative humidity	%RH	3 to 98 %RH	±1% of reading ±1.5 %RH	0.1 %RH
Absolute humidity	g/kg	0 to 190 g/kg	calculated	0.1 g/kg
Dewpoint	°C, °F, K	-20 to +80 °C	calculated	0.1 °C
Wet temperature	°C, °F, K	-20 to +80 °C	±2% of reading ±0.1 °C	0.1 °C
Pt 100 temperature	°C, °F, K	-100 to +400 °C	±2% of reading ±0.1 °C	0.1 °C

Thermo-hygrometer :
• ***Hygrometrer :*** relative and absolute humidity, ambient temperature, Dewpoint, Pt100 temperature.
• ***Psychrometer :*** wet and dry temperature, relative and absolute humidity, enthalpy.
• ***Surface dewpoint:*** Dewpoint of contact, contact temperature, relative humidity, ambient temperature.

Pt100 thermometer :
• **Pt100 temperature *:*** 2 channels.
• ***Dynamic delta T.***

Subfunctions

Hold, min. and max. values, standard , printing, adjustable auto shut-off, choice of languages.

Tight chamber for calibration

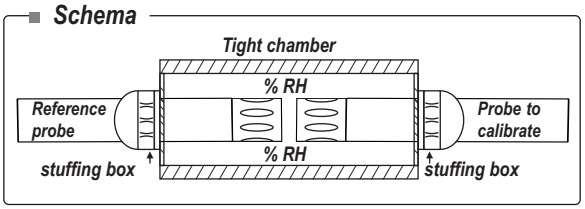
Chamber features

Body material .....translucent PMMA
Chamber length .....180 mm
Chamber diameter .....38 mm
PG 16 stuffing box .....for humidity probe Ø 13 mm
Stuffing box material .....polyamide
Weight.....80 g
Environment.....air and neutral gases

Operating principle

1 - Loosen the two suffing boxes located at the ends of the chamber.
2 - Put the probe to calibrate (probe of the sensor) and the reference probe (probe of the EHK500) in the chamber.
3 - Tighten well the two stuffing boxes to obtain a stable and tight environment.
4 - The two probes are then in a homogeneous environment. Values measured by probes in hygrometry and temperature have to be the same.

Schema



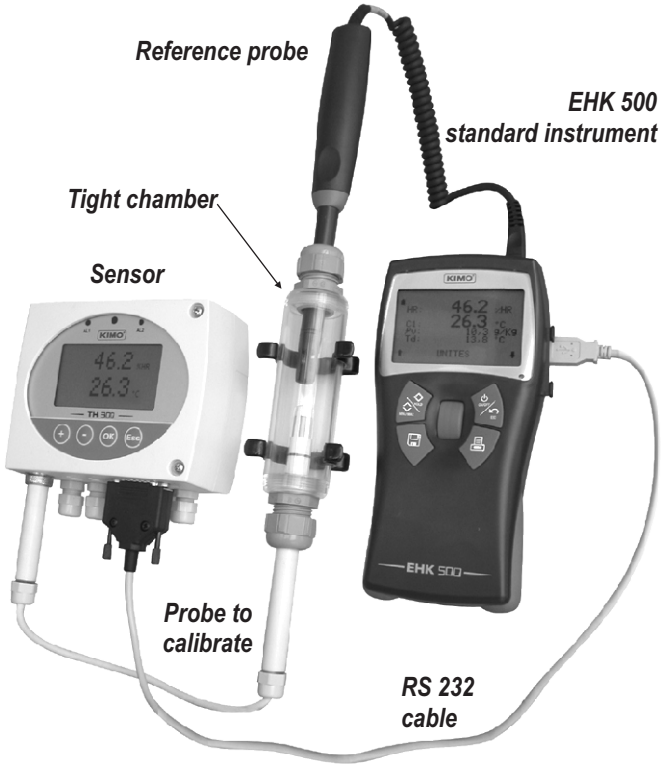
Use

To calibrate a humidity sensor, follow the following procedure :

1 - Switch on EHK500 and the transmitter.
2 - Put the transmitter probe and the reference probe of the EHK500 in the tight chamber.
3 - Tighten stuffing boxes of the chamber to make it totally tight.
4 - Connect the tranmitter and the EHK500 with RS232 cable.
5 - Compare humidity and temperature values of the sensor and the EHK500.
6 - If values are identical, the probe of the sensor is well calibrated.

7 - If values are different, press "" of the EHK500. Then it will adjust the transmitter from values obtained by the standard probe.

Mounting



Reset the offset

If you have a transmitter with a keyboard, it is possible to back to the initial value of the transmitter (displayed value before calibration with EHK500)

See part **"Configuration of class 200/300 transmitters by keyboard" of the user manual**, chapter : "Measurement configuration in hygrometry".

Supplied with...

- Hygrometry probe
- Tight chamber for calibration
- RS 232 cable
- Calibration certificate
- Transport case

Accessories

- Clamps for tight chamber
- Wall mounting for remote humidity probe.
- Saturated salt solution for humidity probe

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