KIMO®
CONSTRUCTEUR

Air velocity   Pressure   Humidity   Air flow   Temperature

CLASS 200

DIRECTIONS FOR USE

New

ELECTRONIC THERMO-HYGROMETER HD 200

CE

SUPPLIED
Calibration
Certificate
WITH

SUMMARY

TECHNICAL SPECIFICATIONS

The HD 200 is a multi-probe instrument, compatible with hygrometry and Pt100 temperature probes, equipped with SMART PRO system. These probes are supplied with calibration or adjusting certificate (last calibration date display when connected). They are automatically recognized when connected, and are fully interchangeable.

	Units of measure	Measuring ranges	Accuracies*	Resolution
Relative humidity	%RH	3 to 98 %RH	±1% of reading ±1,5%RH	0,1 %RH
Absolute humidity	g/kg	0 to 190g/kg	calculated	0,1g/kg
Dew point	°C, °F, K	-20 to +80°C	calculated	0,1°C
Ambient temperature	°C, °F, K	-20 to +80°C	±2% of reading ±0,1°C	0,1°C
Temperature PT100	°C, °F, K	-100 to +400°C	±2% of reading ±0,1°C	0,1°C

* Performed in laboratories conditions, accuracies mentioned in this document will be guaranteed, subject to the same conditions or to a calibration balancing.

DISPLAY :
Graphic, with automatic backlighting. Size 48 x 24 mm.

HOUSING :
Shock-proof, made of ABS/PC, with Elastomer edges.

KEYPAD :
Made of Elastomer : 4 keys and one control knob.

CONNECTIONS :
Connectors : mini-DIN secured plugs.
Numeric connection output : USB.

COMMUNICATION MODE :
RS 232.

MEASURING ELEMENTS :
Hygrometry : capacitive element
Pt100 temperature : Pt100 class A

CONFORMITY :
Electromagnetical compatibility (norm NF EN 61326-1)

POWER SUPPLY :
4 Alcaline batteries 1,5 V LR6

WORKING ENVIRONMENT :
Neutral gas

WORKING TEMPERATURE :
From 0 to 50°C.

STORAGE TEMPERATURE :
From 0 to 50°C.

DIMENSIONS :
176 x 78 x 35 mm

WEIGHT :
400 g

LANGUAGES AVAILABLE :
French, English, Spanish, Portuguese, Italian, German, Dutch.

HYGROMETRY PROBE :

Maximum interval guaranteed* :

EMG (GAL) = ±2,70 %RH between 18 and 28°C (general field)

Range of measurement : 3 to 98%RH
Drift at short time : 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 the 2000/2001 hygrometer chart :
uet : uncertainty of calibration = ± 0,55%RH
ur : uncertainty of resolution = ± 0,003%RH
ud : uncertainty of manufacturing = ± 0,17%RH
us : repetition of comparison = 0,11%RH
Et : difference due to thermical deflection= ± 0,28%RH
Ehl : difference due to hysteresis and linearity = ± 1,25%RH
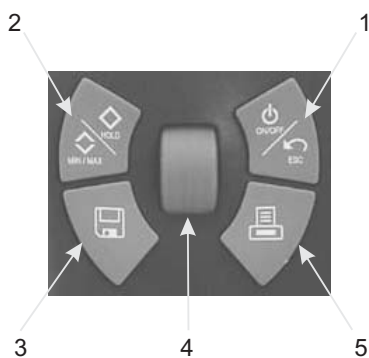k : expansion factor = 2%RH

● **Description :**

Battery load ——————————— Graphic display

Scrolling down menu —————

Connection of the
battery charger

Elastomer protection

System of probes
fixing

● **Keyboard :**

2   1

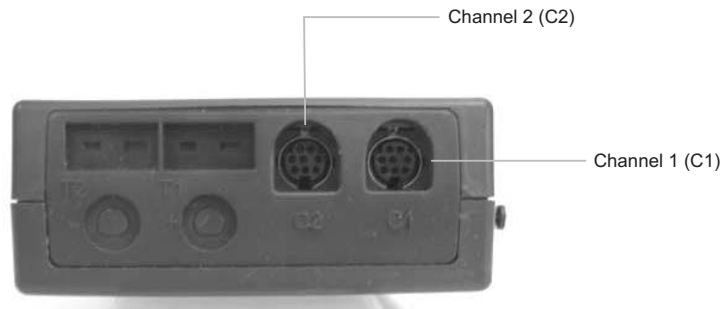3   4   5

1. ON/OFF : Switch on / switch off the instrument.
   ESC : Return to the previous page or on the last
   validated data.

2. Press 1 time : HOLD function, freeze the current
   measure.
   Press 2 times : show the values minimum and
   maximum measured.
   Press 3 times : return to the current menu
   measure.

3. Recording : allow to memorize data.

4. Press on the control knob to validate.
   Browse the menu by scrolling down the knob.

5. Print out of data on a printer.

● **Connections :**

Channel 2 (C2)

Channel 1 (C1)

DISPLAY SIDE

- **Channel 1 (C1) :** Connection of the hygrometry and Pt 100 temperature probes.

- **Channel 2 (C2) :** Connection of a second PT100 probe.

USB port for connection to the printer and joining to a PC

INTRODUCTION OF THE MENU ⬤

To switch on the instrument, press the key "ON/OFF".
The screen shows the name of the device, its serial number, its calibration date, the date and hour (see photo below).

To access to one menu, connect the corresponding probe. If this one uses the SMART PRO system, the screen shows the type of the connected probe, and its calibration or adjusting date. To access to the menu press on the knob. To return to the homepage, disconnect the probe.

To switch off the instrument, press some seconds on the "ON/OFF" key.

TEMPERATURE MENU ⬤

When you connect your probe(s) (see connections p. 3), the screen shows its characteristics. It is possible to connect up to 2 probes PT100 at the same time. Press then on the knob to enter in the menu temperature, the measured value is shown in the screen and the following menu appears on the last line (by browsing the menu by scrolling down the knob):

       - Units
       - Delta T (only if 2 probes PT100 are connected)

To validate a function, press on the knob when the wished function is shown on the screen.

⬤ **Units :**

⬤ **Delta T :**

HYGROMETRY MENU ⬤

When you connect a hygrometry probe,the screen shows its characteristics. Press then on the knob to enter in the hygrometry menu, the screen shows the measured values in humidity, temperature, absolute humidity and dew point temperature and the next menu appears on the last line (browse the menu by scrolling down the knob) :

       - Units
       - Psychrometry
       - Contact dew point temperature (only if a PT100 probe is connected)
       - Delta T (only if a PT100 probe is connected)

To validate a function, press on the knob when the wished function is shown on the screen.

⬤ **Units :**

⬤ **Psychrometry :**
When you access to the sub-menu "Psychrometry", the display shows the temperature, the humid temperature (Tw), the humidity, the absolute humidity (ρ v) and the enthalpy (i). To come out of the psychrometry menu, press on "ESC".

⬤ **Contact dew point temperature :**
When you enter to this sub-menu, the screen shows the temperature of the PT100 probe (external), the temperature of the contact dew point (Td), the humidity and the temperature integrated in the hygrometry probe. To come out of the dew point temperature menu, press on "ESC".

⬤ **Delta T :**

● **Units :**

Browse the different available units by scrolling down the knob and validate pressing on the knob. When you have the choice between various parameters (velocity and temperature, for example), you have to validate each unit of measure.

● **Delta T :**

When 2 PT100 probes are connected, you have the possibility of calculate the Delta T which corresponds to the difference between the temperature measured by C1 and C2. To come out of this function, press the touch " ESC ".
Reminder: possible only between 2 probes of identical technology.

SETTINGS ●

To reach the various settings, switch on the device (do not connect a probe). Press then on "ON / OFF".
The following scrolling down menu appears :
- Date and hour
- Retro-lighting
- Contrast
- Keys Beep
- Languages
- Automatic stop
To validate a function, press on the knob when the wished function is shown on the screen.

● **Date and hour :**

Use the knob to settle each figures of the date and of the hour, and validate at each time pressing on the knob. To return to a figure previously validated, press on " ESC ".

● **Retro-lighting :**

It is possible to activate or to deactivate the retro-lighting of the display : by means of the knob choose "ON", " OFF " or "automatic" and press to validate. To go out of this menu, press on " ESC ".

● **Contrast :**

By the means of the knob, adjust the contrast of the screen from 0 to 7 and validate by pressing on the knob.

● **Keys beep :**

It is possible to activate or to deactivate the tone of keys. Validate the chosen option by pressing on the knob.

⬤ Languages :

By the means of the knob, browse the different available languages and validate pressing on the knob.

⬤ Automatic stop :

It is possible to cancel the automatic stop of the device or to settle it. For that purpose, use the scrolling down knob and choose " OFF " to cancel the automatic stop or choose a value (by slice of 15 minutes). **When you restore data on PC, the automatic stop does not work, but at the end of the load, the device goes out automatically.**

DATA RECORDING, PRINTING AND DELETING ⬤

Before enter in the menu "recording", it is necessary to connect the probes that will be used. Enter in the menu which you wish to record. Press the key "Recording" (see p. 3) to reach the menu " Datalogger ". At the bottom of the screen appears the following scrolling down menu:
- New
- Print.
- Delete

It is thus possible to print data, to record or to delete them.

⬤ New :

This function allows to register a new campaign of measures. It is necessary to enter first of all the name of the file (12 characters at most). Browse the letters by scrolling down the knob and validate every character by pressing on the knob or by choosing the symbol ⏎ if you enter less than 12 characters. Choose then if you wish a manual or automatic recording of the data (by means of the knob).

- **Manual recording :** validate as many points as you wish by pressing on the knob (the number of registered points is indicated on the last line). Press on the key "Recording" to stop the recording. If you really wish to stop, choose "Yes" and to continue to register points, click on "No" (by means of the knob).

- **Automatic recording:** By means of the knob, choose the interval of time between the recording of each of the points (the minimum is of 5 seconds). Choose then the duration on which points are going to be registered (validate the number of days, hours and minutes) then validate. The recapitulative appears on the screen. To begin the recording, press twice on the knob. Once the ended recording, the device switches of. To stop the current recording, press on "Recording". If you really wish to stop, choose "Yes" and to continue the recording, click on "No" (by means of the knob).

To restore the data registered on a PC, switch on the device (without any probe) and connect the cordon on the port USB (see p. 3). **During the recordings, the automatic stop of the device does not work, but at the end of the procedure, it will switch off automatically.**

⬤ Print :

When "Print" is validated, by means of the knob, choose the campaign which you wish to print and validate by pressing on the knob. Go out of the menu "printing" by pressing on " ESC ".

⬤ Delete :

This function allows to delete the campaigns of measure stored in the device. To enter in the menu "delete", validate by pressing on the knob. Then, always by means of the knob, choose to cancel or to confirm the demand.

GUARANTEE

KIMO provides a one-year guarantee, starting from the date on which the appliance was originally purchased, that any new appliance will be free of any manufacturing or structural defects. This guarantee does not cover defects resulting from incorrect handling or from any repairs which may been made by persons other than the manufacturer.

Any defects covered by this guarantee will be repaired free of charge. An estimate will be provided for any damage not covered by this guarantee. The customer's prior approval will be requested before any repairs are done.

KIMO will see to the replacement of any constituent parts of this appliance.

Any appliance, whether under guarantee or not, must be returned carriage paid. A letter detailing the faults defected should be sent with the appliance whenever possible.

CALIBRATION

All KIMO devices are calibrated in our premises and supplied with a calibration certificate, as per the AFNOR FD X 07-012 norms, in accordance with the National Standards.

In order to comply with standards of Quality Assurance, measuring devices should be checked annualy.

AFAQ
ISO 9001
AFAQ N° 2001/16417