KIMO INSTRUMENTS

Technical Data Sheet

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

New

CE

Thermo-hygrometer-air quality
HQ 210

KEY POINTS

- Measurement of hygrometry, temperature, CO_2, and CO gases and air velocity (depending on model)
- Interchangeable measurement modules
- 2 inputs fot Pt100 temperature
- Up to 6 measurements simultaneously
- Large graphic display

CONNECTIONS

Interchangeable measurement modules

1 device = several possible ranges and parameters

Wireless connection

Device/probe wireless connection

SMART-2014 system

Wireless and wired probes automatically recognized

REFERENCES

HQ210

Only portable instrument

HQ 210 STD

HQ210 + SHR 110 probe
(temperature/hygrometry probe in ABS)

HQ 210 P

HQ210 + SCOH 112 probe
(temperature/hygrometry/CO_2 probe)

HQ 210 HT

HQ210 + SHR 300 probe
(temperature/hygrometry in stainless steel)

HQ 210 O

HQ210 + SOM 900 probe
(omnidirectional probe of draught)

The new probes use a mini-DIN cable unique and pluggable that fits on every probes. This cable is supplied with each instrument.
The instruments are supplied in a transport case with a calibration certificate, a charger and a USB cable.

SPECIFICATIONS OF THE PROBES

	Units	Measuring ranges	Accuracies*	Resolutions
SHR 110 and SHR 300 hygrometry probes	Relative humidity : %RH	From 3 to 98%RH	**Accuracy** (Repeatability, linearity, Hysteresis)** : ±1.5%RH (from 15°C to 25°C) **Factory calibration uncertainty:** ±0.88 %RH **Temperature dependence :** ±0.04 x (T-20) %RH (if T<15°C or T>25°C)	0.1%RH
	Absolute humidity[1] : g/Kg, Kj/Kg	From 0 to 600 g/m^3	-	0.1 g/m^3
	Dewpoint[1] : $°C_{td}$, $°F_{td}$	From -50 to +100$°C_{td}$	±0.6% of reading ±0.5$°C_{td}$	0.1 $°C_{td}$
	Wet temperature[1] : $°C_{tw}$, $°F_{tw}$	From -50 to +100$°C_{tw}$	±0.6% of reading ±0.5$°C_{td}$	0.1 $°C_{tw}$
	Enthalpy[1]	From 0 to 15 000 kj/kg	-	0.1 kj/kg
	Temperature : °C, °F	From -20 to +80°C (SHR110) From -40 to +180 °C (SHR 300)	±0.3% of reading ±0.25°C	0.1 °C
Sonde de courant d'air omnidirectionnelle SOM 900	Air velocity : m/s, fpm, km/h	From 0.00 to 5.00 m/s	± 3% of reading ± 0.05 m/s	0.01 m/s
	Relative humidity : %RH	From 5 to 95%RH	**Accuracy** (Repeatability, linearity, Hysteresis) :** ±1.8%RH (from 15°C to 25°C) **Factory calibration uncertainty:** ±0.88 %RH **Temperature dependence :** ±0.04 x (T-20) %RH (if T<15°C or T>25°C)	0.1%RH
	Temperature : °C, °F	From -20 to +80°C	±0.3% of reading ±0.25°C	0.1 °C
SCOH 112 CO2/hygrometry/ temperature probe	Temp. : °C, °F CO_2 : ppm Hygro : %HR	From -20 to +80°C From 0 to 5000 ppm From 5 to 95%HR	±0.3% of reading ±0.25°C ±3% of reading ±50 ppm **Accuracy** (Repeatability, linearity, Hysteresis) :** ±1.8%RH (from 15°C to 25°C) **Factory calibration uncertainty:** ±0.88 %RH **Temperature dependence :** ±0.04 x (T-20) %RH (if T<15°C or T>25°C)	0.1 °C 1 ppm 0.1%RH

HQ 210 instruments can also calculate and display the **WBGT index** that corresponds to a index of composite temperature used to estimate the effect of temperature, humidity and solar radiation on humans.
It is calculated from the following temperatures :

- T_w= Wet-bulb temperature or natural wet temperature, measurement calculated from the relative humidity of a thermo-hygro probe ;
- T_g= Globe temperature, measured with a globe thermometer, or black globe thermometer, whose sensitive element is in black glass or black-smoke coated in order to run approximatively as a black body to measure the solar radiation. The measurement is realised with a temperature probe placed in a black ball ;
- T_d= Air temperature (measured by a thermometer whose bulb is protected from the solar radiation by a screen). The temperature measurement is realised with a thermo-hygro probe ;

HQ 210 instruments have the following functions for the measurement of temperature, hygrometry and air quality :

- **AIR QUALITY PROBES (CO / temperature, CO_2 / temperature, CO_2 / temperature / hygrometry) :** Audible alarm (2 setpoints), Selection of units, Hold function, minimum and maximum values
- **THERMOCOUPLE MODULE :** Delta T, Alarm (lower and upper setpoints), Selection of units, Hold function, minimum and maximum values

**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.*
[1] Calculated value
***As per NFX 15-113 standard and the charter 2000/2001 Hygrometers, GAL (Guaranteed Accuracy Limit) which has been calculated with a coverage factor value of 2 is ±2,88%RH between 18 and 28°C on the measuring range from 5 to 95%RH. Sensor drift is less than 1%RH/year.*

TECHNICAL SPECIFICATIONS OF THE HQ 210

Connections	2 mini-DIN connections SMART-2014 probes and 1 micro-USB port for charging and PC connection
Power supply	Lithium-Ion battery
Autonomy	57 h with hygrometry probe
Memory capacity	Up to 1000 dataset of 20 000 points
Operating temperature	From 0 to +50 °C
Storage temperature	From -20 to +80 °C
Auto shut-off	Adjustable from 15 to 120 minutes or Off
Weight	485 g
Operating environment	Neutral gas
Conformity	EMC 2004/108/CE and EN 61010-1 directives
Languages	French, English, Dutch, German, Italian, Portuguese, Swedish, Norwegian, Finn, Danish, Chinese, Japanese

AVAILABLE PROBES AND MODULES (OPTIONAL)

Light probe (SLU)
Measuring ranges from 0 to 150 000 lx and from 0 to 13935 fc

4 thermocouple channels module (M4TC)
Measuring range from -200 to +1760 °C (according to thermocouple type)

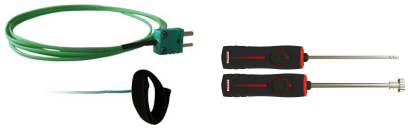
Climatic conditions module (MCC)
Measuring ranges from 0 to +50°C, from 800 to 1100 hPa and from 5 to 95%RH

Wireless hygrometry probe (SHRF 110)
Measuring ranges from 3 to 98%RH, from -50 to +100 °Ctd and from -20 to +80°C

High temperature wireless hygrometry probe (SHRF 300)
Measuring ranges from 3 to 98%RH, from -50 to +100 °Ctd and from -40 to +180°C

Black ball (BN)

Large choice of temperature probes (see related datasheet) : ambient / contact / penetration / immersion...

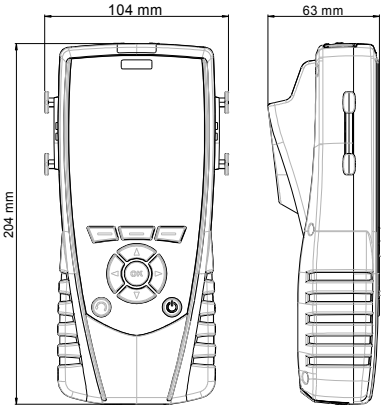


DELIVERY KITS AND OPTIONS

Description	HQ 210	HQ 210 STD	HQ 210 HT	HQ 210 P	HQ 210 O
Telescopic omnidirectional probe (SOM 900)	○	○	○	○	√
Hygrometry probe in ABS (SHR 110)	○	√	○	○	○
Hygrometry probe in stainless steel (SHR 300)	○	○	√	○	○
CO / temperature probe (SCO 110)	○	○	○	○	○
CO_2 / temperature probe (SCO 112)	○	○	○	○	○
CO_2 / temperature / hygrometry probe (SCOH 112)	○	○	○	√	○
Light probe (SLU)	○	○	○	○	○
Pt100 SMART-2014 probe	○	○	○	○	○
Pt100 wireless probe	○	○	○	○	○
4 thermocouple channels module(M4TC)	○	○	○	○	○
Climatic conditions module (MCC)	○	○	○	○	○
Wireless hygrometry probe in ABS (SHRF 110)	○	○	○	○	○
Wireless hygrometry probe in stainless steel (SHRF 300)	○	○	○	○	○
K, J, T and S thermocouple probe	○	○	○	○	○
Calibration certificate	○	√	√	√	√
Transport case	√	√	√	√	√
Additional battery	○	○	○	○	○

√ : supplied with ○ : optional

FEATURES OF THE HOUSING



Material : ABS/PC and elastomer

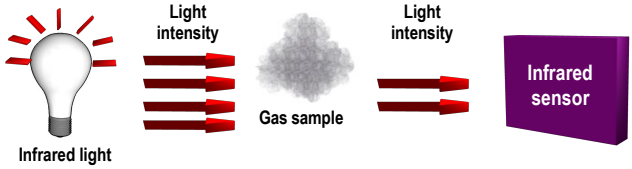
Protection : IP54

Display : LCD 120 x 160 px ;
Dimensions : 58 x 76 mm,
Backlight
Display of 6 measurements including 3 simultaneously

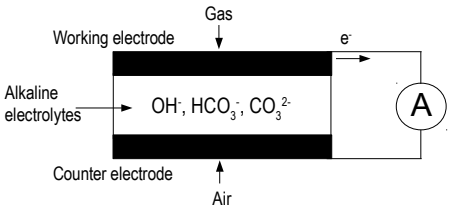
Key pad : elastomer, 10 keys

OPERATING PRINCIPLE

Non dispersive infrared absorbance
A gas absorbs light at a specific wavelenght, some of the intensity emitted by the infrared source absorbed by the gas sample. The amount of light read by the IR sensor is inversely proportional to CO_2 concentration.



Electrochemical sensor
Electrochemical cell consists of a container, 2 electrodes, connection wires and an electrolyte. Carbon monoxide is oxidised at one electrode to CO_2 whilst oxygen is consumed at the other electrode. The current produced is proportional to CO concentration



ACCESSORIES

Datalogger : PC software for data recording and processing.

RTE : Telescopic extension lenght 1m bent at 90° for measuring probe

CSM : Mini-DIN / mini-DIN cable for probe

KIMP23 : Infrared printer

SAD : Backpack

MAINTENANCE

We carry out calibration, adjustment and maintenance of your devices to guarantee a constant level of quality of your measurements. As part of Quality Assurance Standards, we recommend you to carry a yearly checking.

WARRANTY PERIOD

Devices have 1-year guarantee for any manufacturing defect (return to our After-Sales Service required for appraisal).

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