

KISTOCK WIRELESS DATALOGGER KH210-RF

Temperature/hygrometry
current/voltage/pulses



KEY POINTS

- 20 000 measurement points
- IP65
- Visual alarm
- Possibility to turn off the Kistock
- 2 configurable setpoint alarms
- Magnetic mounting
- Supplied with secured wall-mounting bracket

REFERENCES

Part number	Internal sensor	Display	External input number	Nb of recording points	Parameters
KH210-AN-RF	yes	no	1	20 000	Temperature, humidity, current, voltage, pulses
KH210-AO-RF		2 lines			
KH210-DO-RF	no				

TECHNICAL FEATURES

Units displayed	°C, °F, %RH, mV, V, mA, A
Resolution	0.1 °C, 0.1 °F, 0.1%RH, 0.001 V, 1 mV, 0.1 A, 0.001 mA
Universal external inputs	1 mini-Din connector for temperature, current, voltage, pulses
Internal sensor (KH210-AN-RF/KH210-AO-RF)	Temperature, humidity, current, voltage, pulses
Offset channel (KH210-DO-RF)	Temperature / hygrometry
Setpoints alarms	2 setpoint alarms on each channel Possibility to send e-mail in case of alarm*
Frequency of the measurement	From 1 s to 24 h
Operating temperature	From -20 to +70 °C
Storage temperature	From -40 to +85 °C
Radio span (in free field)	300 m
Frequency	868 MHz
Battery life	3 years**
Data storage	In the kistock until downloading on PC

FEATURES OF HOUSING

Dimensions

116.5 x 74.4 x 39.8 mm

Weight

160 g

Display

2 lines LCD screen
Screen dimensions : 45 x 28.5 mm

Control

2 keys : Select and OK

Material

Compatible with food industry environment
ABS housing
Sides and caps made of Elastomer

Protection

KH210-AN-RF/KH210-AO-RF : IP65 (housing)
KH210-DO-RF : IP65

PC communication

1 digital input

Digital electronics

Lacquer protected circuit board
Meets RoHS standards

Battery power supply

Type lithium 3.6 V

Visual alarm

2 electroluminescent diodes (green and red)

Environment

Air and neutral gases

*thanks to the Kilog RF software / ** on the basis of 1 measurement each 15 minutes at 20°C

TECHNICAL FEATURES FOR PROBES, INTERNAL SENSOR AND CABLES

• THERMO-HYGROMETRY PROBE¹

	Hygrometry	Temperature
Sensor type	CMOS	
Measuring range	From 5 to 95 %RH	From -20 to +70 °C
Accuracy*	Accuracy** (Repeatability, linearity, hysteresis) : $\pm 2\% \text{RH}$ (from 15°C to 25°C) Factory calibration . Uncertainty : $\pm 0,88\% \text{RH}$ Temperature dependence : $\pm 0.04 \times (T-20)\% \text{RH}$ (if $T < 15^\circ\text{C}$ or $T > 25^\circ\text{C}$)	From -20 to 0°C : 2% of reading value $\pm 0,6^\circ\text{C}$ From 0 to 30 °C : $\pm 0,5^\circ\text{C}$ From 30 to 70 °C : 1,5% of reading value
Response time ($t_{0.63}$)	50 s ($V_{air} = 2 \text{ m/s}$)	25 s ($V = 2 \text{ m/s}$)

¹ Interval thermo-hygrometry probe for KH210-RF-A and external for KH210-RF-DO.

*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.

**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 $\pm 2,88\% \text{RH}$ between 18 and 28°C on the measuring range from 5 to 95%RH. Sensor drift is less than 1%RH/year.

• TEMPERATURE PROBE (optional)

Sensor type	NTC
Measuring range	From -40 to +120 °C (remove probe)
Accuracy*	$\pm 0.3^\circ\text{C}$ ($-25^\circ\text{C} < T < +70^\circ\text{C}$) $\pm 0.5^\circ\text{C}$ (beyond)

• CURRENT INPUT CABLE (optional)

Measuring range	0/4-20 mA
Accuracy*	$\pm 0.2\%$ of measuring $\pm 1 \mu\text{A}$

• VOLTAGE INPUT CABLE (optional)

Measuring range	0-10 V
Accuracy*	$\pm 0.2\%$ of measuring $\pm 1 \text{ mV}$

• AMMETER CLAMPS (optional)

Measuring range	0-50 A / 0-100 A / 0-200 A / 0-600 A
Accuracy*	± 1 to 2.5 % of reading value according the range

• PULSES CABLE (optional)

Maximum voltage	5 V
Input type	TTL frequency count

*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.

RECORDER FUNCTION



KISTOCK datalogger is supplied turned off to save battery life. To activate it :

- Press “OK” key for 5 s , green LED “On” blinks.

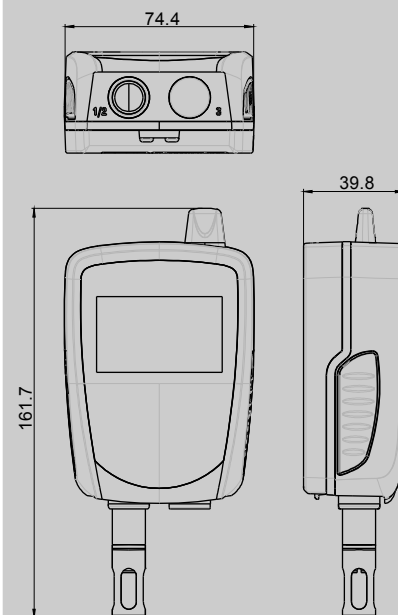
To turn it off :

- Press “Select” and “OK” keys at the same time for 5 s.

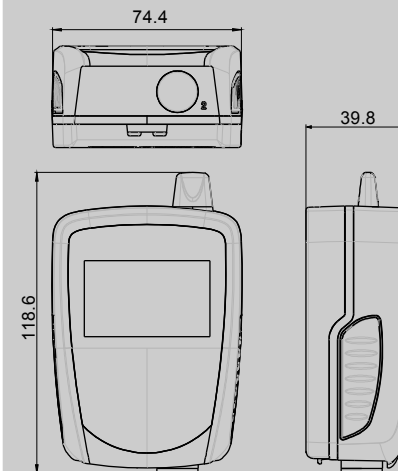
It is impossible to turn it off during a recording or a data download.

DIMENSIONS (mm)

KH210-RF-DO



KH210-RF-A



EXTERNAL INPUT



Mini-Din connector



During a measurement dataset :

- Press « **Select** » et « **OK** » at the same time for 5 s to deactivate both buttons : red led flashes twice quickly.
- Press « **Select** » et « **OK** » at the same time for 5 s to reactivate them : green led flashes twice quickly.

Five recording modes

KISTOCK can record in 5 different ways :

- **"Immediate"** mode records values according a predefined interval.
 - **"Minimum"**, **"Maximum"** and **"Average"** record automatically the calculation of minimum, maximum or average of measured values during an interval of recording.
 - **"Monitoring"** mode allows to get an accurate history report during error events to help troubleshooting, without stopping the measurement logging. To proceed this way, you just have to define :
 - a record interval to be used whilst the readings are beyond the setpoints.
 - a record interval for the values measured during each reading beyond the setpoints.
- Furthermore, you can also let your KISTOCK record non-stop (**"loop"** recording option).

Two operation modes :

- Autonomous mode : data download is made wireless through the Kilog RF software.
- Network mode : measurements are stored in the datalogger and sent to the computer at regular intervals (in case of alarm, the information is directly sent to the computer). So Kistock memory is used as buffer memory and is reset at each sending. In this mode, several Kistocks can be linked to a computer at the same time.

Three modes dataset start

Once your recording mode has been set, you can launch your dataset :

- With a delayed start (with predefined date and time)
- With the software
- With push-button

Six modes dataset stop

You can stop your dataset :

- As per a date and time (if it was started the same way)
- As per a period
- As per a predefined number of recording points
- Once the storage capacity is full
- With **"Stop"** option of the software
- By holding "OK" key for at least 5s, if this function has been previously activated by the software.

SCREEN



°C.. Temperature in degrees Celsius

°F.. Temperature in degrees Fahrenheit

%RH..... Relative humidity

V or mV Voltage expressed in V or mV

A or mA Current expressed in A or mA

Indicates the reception powerful of the datalogger

END

DATASET is finished

REC

One value is being recorded

LOG

Flashing : dataset has not started yet
Constant : data set is in progress

FULL

Slow flashing : dataset is taking 80-90% of storage capacity
Fast flashing : dataset is taking 90-100% of storage capacity
Constant : storage capacity filled up

1 2

Channel No. which is measuring

ACT

Refresh of displayed measurements

TIME

Display of measurement and recording intervals

Low battery indicator

MIN

Displayed values correspond to maximum and minimum values of the channels

MAX

Alarm action type : rising or falling action

SOFTWARE



• Configuration and data processing software

The new **KILOG RF** software is specially designed for the **KISTOCK-RF** range. In addition to the standard functions of dataloggers configuration and data processing (average, minimum and maximum values...), it allows the creation of a wireless dataloggers network (**up to 100 dataloggers**) for a real-time monitoring.

Ref. : KILOG-RF



Software is compatible with the wired range.

SOFTWARE (continuation)



- **Communication base with KILOG-RF software**

This base allows to communicate by radio frequency with Kistock-RF (kistock by kistock data recovery, programming of Kistock-RF...). It must be continuously powered and connected to the PC for the use of kistock in network mode. It is equipped with a USB connection for PC, a jack connection for programming and downloading wired Kistock and a relay output. Supplied with main adapter, KILOG-RF software and USB cable.

Ref. : BK-RF

ACCESSORIES



- **Data collector.**

KNT data collector allows you to collect measurements from one or several KISTOCK directly on-site (up to 500,000 values stored). Data can be displayed and printed from the KNT or download to your PC.

Ref. KNT 310



- **Alarm relay** that can switched from KILOG-RF software via BK-RF base. Supplied with main adapter.

Ref : KAL-RF



- **Device to extend radio signal** to kistocks (300 m). Supplied with main adapter.

Ref : KPR-RF



- **Autonomous instrument to check communication.** It allows to check signal reception for positioning of dataloggers, extender and alarm box

Ref : KTC-RF

- **Wire extensions for NTC temperature probe.**

Made of PVC HT, 5m long with male and female mini-Din connectors

Ref. KRC 5

Note : you can connect several extensions together (maximum length 25m)

- **Lace.** Ref. KDC

SUPPLIED WITH



- **Secured wall-mounting bracket**

KIMO has designed a new proprietary anti-theft system with no padlock. Your system cannot be unlock or damaged : your installation is fully secured.

CALIBRATION

KISTOCK dataloggers can be supplied with calibration certificate as an option.

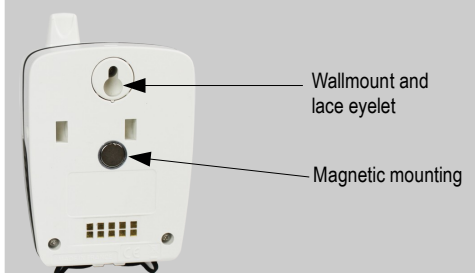
WARRANTY PERIOD

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

MOUNTING

KISTOCK can be mounted in different ways ; you can also move it or install it very easily.

- Magnetic mounting or wallmounting (see photos)
- Secured mounting (optional, see supplied with)



www.kimo.fr

Distributed by :



EXPORT DEPARTMENT

Tel : + 33. 1. 60. 06. 69. 25 - Fax : + 33. 1. 60. 06. 69. 29

e-mail : export@kimo.fr