KIMO INSTRUMENTS

Technical Data Sheet

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

KTH 300 KISTOCK

Temperature and humidity datalogger

- *Up to 3 parameters*
- *Thermometer and thermo-hygrometer functions*
- *Large LCD display*
- *1 or 2 external inputs*
- *Fast data download (1,000 values/second)*
- *Up to 100,000 measurement points*
- *2 configurable setpoint alarms*
- *Dew point calculation*
- *Small dimensions*
- *Magnetic mounting*
- *IP 67 or IP 54 housing and Elastomer protection pads*

Technical features

Units displayed..... °C, °F, %RH, mV, V, mA, A,°Ctd,°Ftd
Resolution.....0.1°C, 0.1°F, 0.1%RH,
1mV, 0.001V, 0.001mA, 0.1A
External inputs.....1 or 2 Mini-DIN connectors
Setpoint alarms.....2 setpoint alarm on each channel
Frequency of measurement.from 1s to 24h
Working temperature.....from –20 to +70°C
Storage temperature..... from –40 to +85°C
Battery life.....5 years *
(*) on the basis of 1 measurement each 15 minutes at 20°C

Thermo-hygrometry probe

- ***Hygrometry***

Type of sensor.....Capacitive
Measuring range.....0 to 100%RH
Accuracy *(GAL).....± 2.58%RH of value displayed
.....between 18°C and 28°C
Response time.....$t_{0.63}$=25s (of 10% RH to 80%RH, V_{air}=2m/s)

- ***Temperature***

Type of sensor.....Pt100 Class 1/3 DIN as per IEC 751
Measuring range.....-20 to +70°C (KTH 300A)
-20 to +120°C (KTH 300P)
-40 to +180°C (KTH 300I)
Accuracy..... KTH 300A
±0.4% of value displayed
±0.25°C (+10°C<T<+30°C) and ±0.5°C beyond
KTH 300P, KTH 300I
±0.3% of value displayed ±0.25°C
Response time.....$t_{0.63}$=9s for V_{air}=2m/s *based on a probe with no filter*

***Guaranteed Accuracy Limits (GAL)**
As per NFX 15-113 standard and as per the Charter « 2000-2001 HYGROMETERS »
EMG (GAL) = ±2.58 %RH between 18 and 28°C (normal measurement range)
Measuring range: 3 to 98%RH,
Short-term drift: 1%RH / year
$EMG = E_t + E_{hl} + k\,(u_{et}^2+u_r^2+u_d^2+u_s^2)^{1/2}$
E_{hl} : linearity and hysteresis = ±1.19%RH
E_t : temperature coefficient error = ± 0.31%RH with :
u_{et} : uncertainty of calibration = ± 0.51%RH
u_r : uncertainty of resolution = ± 0.003%RH
u_d : manufacturing dispersion = ± 0.15%RH
u_s :comparison repeatibility = 0.10%RH
k : coverage factor value = 2

Temperature probes (optional)
Type of sensor.....Pt100 class A as per IEC 751
Measuring range.....-100 to +400°C (according to the probe)
Accuracy.....±0.4% of value displayed ±0.3°C
See technical datasheet « Measuring probes and cables for Class 300 KISTOCK dataloggers».

Current input cable (optional)
Measuring range.....0/4-20mA
Accuracy ±0,2%mesure±0,1µA

Voltage input cable (optional)
Measuring range.....0-2.5V
Accuracy ±0,2%mesure±0,1mV
Measuring range.....0-10V
Accuracy ±0,2%mesure±0,1mV

Ammeter clamps (optional)
Measuring range.....0-600A
Accuracy..... ±1 to 2.5% of value displayed according to the range
**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.*

Accessories supplied

KTH 300 can be supplied with or without thermo-hygrometry probe. Several standard kits are available, and you can also select your customized kit

KTH 300
Basic model on which you add your own selection of probes

KTH 300 A
Kit including KTH300 supplied with integrated thermo-hygrometry probe made of Polycarbonate.
Measuring range :
-20 to +70°C / 0 to 100%RH

KTH 300 P
Kit including KTH300 supplied with remote thermo-hygrometry probe made of Polycarbonate, length 150mm.
Measuring range :
-20 to +120°C / 0 to 100%RH

KTH 300 I
Kit including KTH300 supplied with remote thermo-hygrometry probe, made of stainless steel, length 150 mm.
Measuring range :
-40 to +180°C / 0 to 100%RH

	KTH 300	KTH 300A	KTH 300P	KTH 300I
External inputs	***2***	***1***	***2***	***2***
Thermo-hygrometry probe	*O*	*X PC integrated*	*X PC remote*	*X st.steel remote*
Temperature probe	*O*	*O*	*O*	*O*
Current input cable	*O*	*O*	*O*	*O*
Voltage input cable	*O*	*O*	*O*	*O*
Ammeter clamp	*O*	*O*	*O*	*O*

X : Supplied in standard with the instrument - O : optional

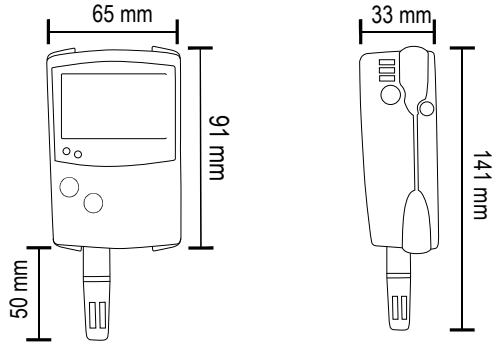
KTH300 KISTOCK can work either with 1 or 2 external temperature probes or a single thermo-hygrometry probe, current/voltage input cable or ammeter clamp.

Features of housing

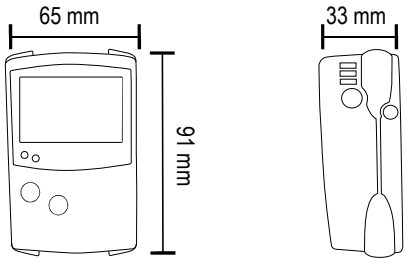
Dimensions..... 91 x 65 x 33 mm
Weight.....85g
Display..... 2-line LCD display
Dimensions of screen : 45 x 28,5 mm
Control.....2 keys (« SELECT » and « OK »)
Material..... Compatible with food industry environment
Housing made of Polycarbonate
Sides and caps made of Elastomer
Protection.....IP67 (KTH300, KTH300P, KTH300I)
IP54 KTH300A
PC communication.....1 input for Jack connector (male 3.5)
Electronics.....Digital electronics
Lacquer protected circuit board
Meets RoHS standards
Battery power supply..... Lithium 3.6V 1/2 AA
Visual alarm..... 2 electroluminescent diodes (green and red)
Environment.....Air and neutral gases

Dimensions

KTH 300 A



KTH 300, KTH 300 I, KTH 300 P



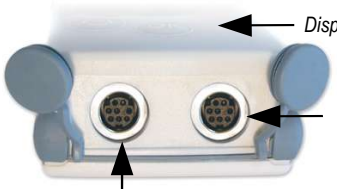
Connections

External inputs

• **KTH 300 A** external inputs

Mini-DIN connector
Probes input :
- Pt100
- current input cable
- voltage input cable
- ammeter clamp

• **KTH300, KTH 300I, KTH 300P** external inputs



Display-

Mini-DIN connector
Probes input:
- Pt100
- current input cable
- voltage input cable
- ammeter clamp.

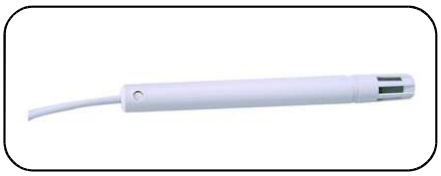
Mini-DIN connector
Probes input:
- thermo-hygrometry
- Pt100.

Only Class 300 probes shall be connected (not any other probes), as described above.

Input for PC connection

Jack connector (3.5)
Input for KISTOCK-PC software

Features of probes



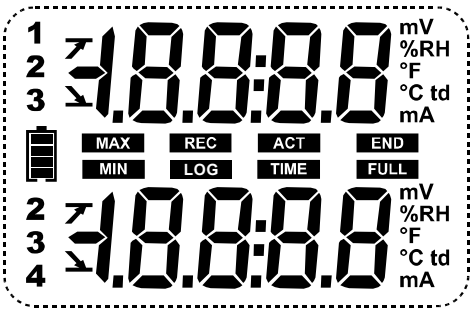
Probes made of Polycarbonate
Length.....150 mm
(300 mm available on request)
Diameter..... 13 mm
Cable..... Silicone, diameter 4.8 mm
length 2 m
(further lengths available on request)

Tips for probes made of Polycarbonate
Material of the tip..... ABS / PC
Material of the filter..... STAINLESS STEEL
Type of filter.....mesh
Maximum particles.....25 µm
Maximum air velocity..... 25 m/s
Length.....30 mm

Probes made of stainless steel
Length.....150 mm
(300 mm available on request)
Diameter..... 13mm
Cable..... Silicone, diameter 4.8 mm
length 2 m
(further lengths available on request)

Tips for probes made of stainless steel
Material of the tip..... STAINLESS STEEL
Material of the filter..... STAINLESS STEEL
Type of filter.....mesh
Maximum particles.....25 µm
Maximum air velocity..... 25 m/s
Length.....30 mm

Display



%RH..... Relative humidity
°C..... Temperature in degrees Celsius
°F..... Temperature in degrees Fahrenheit
td..... Dew point temperature
V or mV..... Voltage expressed in V or mV
A or mA..... Current expressed in A or mA

END *One value is being recorded*

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

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

FULL *Slow Flashing: data set is taking 80-90% of storage capacity*
Fast Flashing: data set is taking 90-100% of storage capacity
Constant: storage capacity filled up

1 2
2 3
3 4 *Channel no. which is measuring*

OFF *Auto switch-off (from 1 to 30 minutes)*

ACT *Refresh of displayed measurements*

TIME *Display of measurement and recording intervals*

Status of battery life: 5 levels (4 blocks + empty battery)
Flashes when only one block is remaining

MIN *The values displayed correspond to maximum and minimum values of the channels*
MAX

Alarm action type: rising or falling action

DT *Difference of temperature between 2 external probes*

UNIT *Measurement unit selected*

bAt *flashing on the screen + flashing of LEDs : mean that battery must be changed*

Err *+ flashing of the green LED : detection of communication error → Press **« Select »** and **« OK »** keys to reset the instrument.*

Err *+ flashing of the red LED : detection measurement error → Press **« Select »** and **« OK »** keys to reset the instrument.*

Recorder functions

5 recording modes

KISTOCK can record in 5 different ways :

« Immediate» mode => to record values according to a predefined interval
• « Minimum », « Maximum » and « Average »=> to record automatically the calculation of minimum, maximum or average of values measured during an interval
• « Monitoring »=> 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).

4 types of data set start

Once your recording mode has been set, you can launch your data set :
with a delayed start (with predefined date and time)
• with the software
• with push-button
• with « Online » option. In this case, your data sets are directly sent, saved and displayed on your PC in real time.

6 types of data set stop

You can stop your data set:
according to a date and time (if it was started the same way)
• according to a period
• according to 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.

Thermo-hygrometer function

Thermometer function
Once thermometer function is activated, KISTOCK allows you to measure in real-time and display information as below:
difference of temperature between 2 external probes (« Delta T »),
• « Minimum »,
• « Maximum »
• or hold the temperature measured (« Hold »).

Thermo-hygrometer
Once thermo-hygrometer function is activated, you can display:
• « Minimum »
• « Maximum »
• or hold the temperature and humidity measured (« Hold »).

Measuring probes and cables

Large choice of Pt100 Class A temperature probes: general use, penetration, ambient, wire, Velcro, with handle...

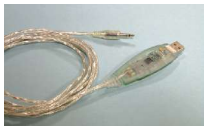
- Remote thermo-hygrometry probes made of Polycarbonate and stainless steel
- Current and voltage input cables
- Ammeter clamps

See technical datasheets « Measuring probes and cables for Class 300 KISTOCK dataloggers »)

KILOG *software*

• Configuration and data processing software
KILOG software enables you to configure, save and process your data in a very simple way.

- Software.....*Ref. KILOG*
- Complete set.....
- 1 KILOG software + 1 USB inteface.....*Ref. KIC2*
- 1 KILOG software + 2 USB interfaces..... *Ref. KIC12*

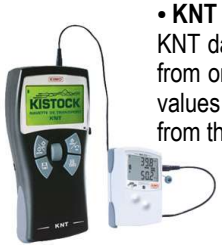


• KISTOCK-PC interface
This USB cable enables you to connect your KISTOCK to your PC.
Ref. I-KIC2

• KILOG CFR *software*
KILOG CFR software is the key tool for users who require traceability, in accordance with 21CFR-Part11 standards. Security and integrity of data are guaranteed : it is not possible to modify or tamper with the data.

- Interface.....*Ref. I-KIC2*
- Complete set : KILOG CFR software + 1 interface... *Ref. KIC2 CFR*

Accessories



• KNT data collector
KNT data collector allows you to collect measurements from one or several KISTOCK directly on-site (500,000 values stored). Data can then be displayed and printed from the KNT or downloaded to your PC.
Ref. KNT 300

• Printer for KNT 300 data collector
Ref. ITP

• Secured wall-mounting bracket
KIMO has designed a new proprietary anti-theft system with no padlock. Your system cannot be unlocked or damaged: your installation is fully secured.
Ref. KAV

Once your KISTOCK is set on the mounting plate, insert the key to lock the mounting system.

To unlock: insert the key inside the metallic axis, and make ¼ turn.

Remove the key to release the metallic axis. Your KISTOCK is now unlocked.

- ***Cable for Pt 100 temperature probe***
  Made of PVC (10 cm), supplied with Jack connectors (male and female) Ref. KCA
- **Lace** . *Ref. KDC*
- **Lithium ½ AA battery .** *Ref. KBL*

Mounting

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

- Magnetic mounting or wallmounting (see photo)
- Secured mounting (optional, see accessories)

How to change the battery

With 5-year battery life (*), KISTOCK guarantee long-term measurements.
To change the battery:

- Remove the screw located at the back, with a screw driver.
- Remove the front part, along with the old battery.
- Insert the new battery observing the proper polarity.
- Replace the front.
- Tighten the screw.
- **Press « Select » and « OK » keys for 2 seconds to refresh battery level.**

(*) on the basis of 1 measurement each 15 minutes at 20°C

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).

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