IAQ Solutions

IAQ monitoring has never been so easy

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KD Engineering

IAQ Monitoring

Public awareness of indoor air quality (IAQ) is on the rise. North Americans are spending almost 90% of their time indoors, so it's not surprising there is an increased concern about how building materials, cleaning chemicals, heating, and air conditioning systems are affecting building inhabitants.

Common IAQ problems include inadequate ventilation, improper temperature and humidity, excessive carbon monoxide, and high particulate levels. If these problems are left unresolved, occupants can experience drowsiness, irritation, dizziness, and other more serious health problems.

Recent innovations in sensor and data logging technologies now allow consultants, contractors, and engineers to economically monitor the IAQ of buildings. Having an IAQ monitoring program in place allows for fast, reliable investigation of complaints or concerns, and creates historical IAQ documentation.

IAQ Monitor Feature Comparison

Features	Home AirBoxx	shAirBoxx	Canary	AirBoxx
Data Logging	●	●	●	●
Static Graphs	●	●	●	●
Weather Proof Carrying Case	●	●	●	●
Upgradeable Firmware	●	●	●	●
Base Parmeters - CO, CO2, Temp & RH	●	●	●	●
VOCs & Dust	●	●	●	○
Mesh Networking	○	●	●	○
Remote Data Access	○	●	●	○
Data Analysis	○	○	●	○
IAQ Recommendations	○	○	●	○
Full Feature Reporting	○	○	●	○
Advanced Graphs	○	○	●	●
Secure Kensington Lock	○	○	○	●
Adjustable Logging Intervals & TWA	○	○	○	●
PID, O3, H2S, NO2, O2, SO2	○	○	○	●
Walkthru mode	○	○	○	●
Display	○	○	○	●
User Calibration Option	○	○	○	●
Battery Power	○	○	○	●

IAQ at Home

Clean Air is a Healthy Business

The Home AirBoxx Indoor Air Quality monitor provides emperical evidence of IAQ problems, allowing you to diagnose, deduce and remediate indoor air issues within the residential market.

Build Trust

Indoor air quality testing provides both the homeowner and the HVAC contractor with valuable scientific data on potential air quality problems in the home. It is the first step in creating solutions for the homeowner. The Home AirBoxx helps to build a trusting homeowner/contractor relationship and takes the guess work out of IAQ issues, concerns and solutions. This approach sets the contractor apart as a professional IAQ solutions provider.

The Home AirBoxx is an indoor air quality testing device designed for residential HVAC contractors. It's very easy to use – just place the unit in the customer's home, turn on the power and it begins to record the six key air quality parameters: CO, CO2, Temperature, RH, Dust and VOCs.

Despite the name, the Home AirBoxx can also be used in light commercial applications. Facility managers can use the monitor to conduct proactive, or on-demand data collection. Offices can use it as well to monitor the office environment, keeping tabs on the comfort and safety of the employees.

Technical Specifications

CO2 Sensor (NDIR)
Measuring Range: 0 to 10000 ppm
Graph Range: 0 to 1500 ppm

CO Sensor (electrochemical)
Measuring Range: 0 to 250 ppm
Graph Range: 0 to 25 ppm

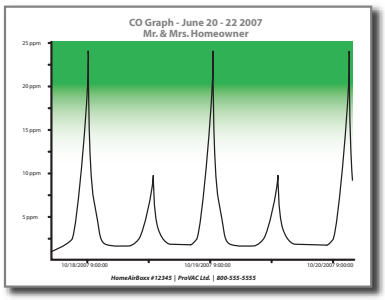
Temperature Sensor
Measuring Range: 32 to 122°F
Graph Range: 50 to 90°F

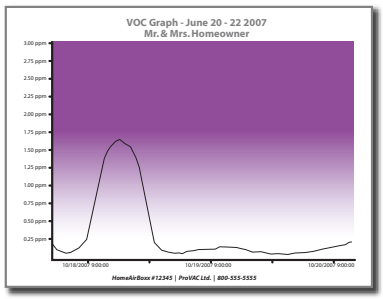
Relative Humidity Sensor
Measuring Range: 5 to 95% RH
Graph Range: 0 to 100% RH

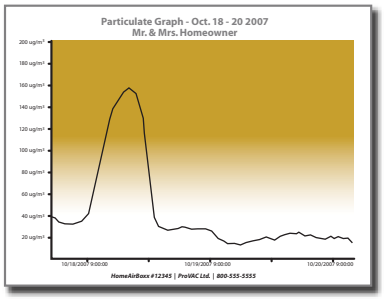
Dust Sensor
Measuring Range: 0 to 200 µg/m³
Graph Range: 0 to 200 µg/m³

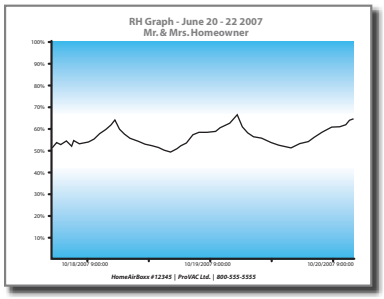
VOC Sensor
Measuring Range: 0 to 10.0 ppm
Graph Range: 0 to 3.0 ppm

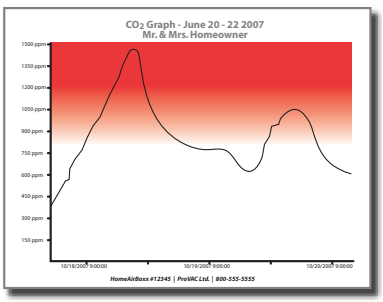
Sample Home AirBoxx Graphs

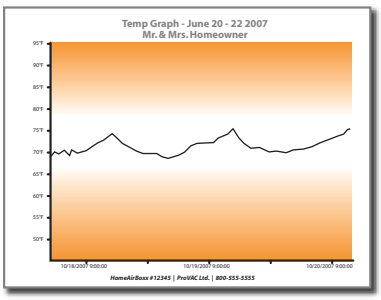












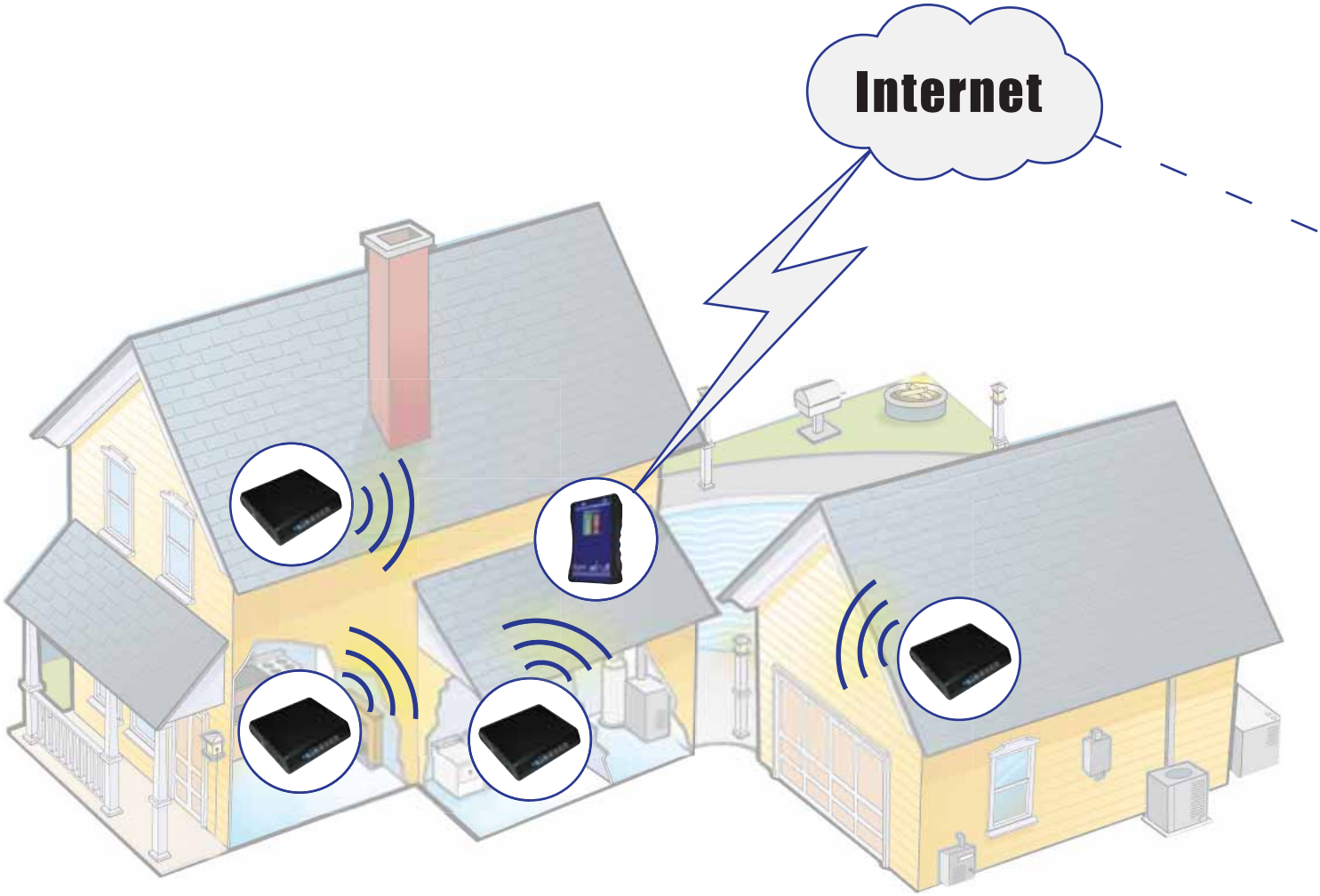
Wireless IAQ

Think Outside the Boxx

KD Engineering introduces the shAirBoxx – a wireless IAQ monitor, capable of transmitting real-time to a website. This instrument will allow the user to have the data and report completed before visiting the client. It also enables short and long term installations in buildings which can then be monitored remotely.

The shAirBoxx works in conjunction with the KD BlackBoxx. Using the BlackBoxx, up to 16 shAirBoxxes can be networked and the data can be collected and stored or uploaded for remote viewing.

The shAirBoxx is at the forefront of a new era of mesh networked monitoring solutions. It can be used to remotely collect proactive IAQ data, keeping building occupants happy and healthy. It can be used to show building occupants their air quality via a website.



The BlackBoxx

The KD Engineering BlackBoxx is a two function instrument meant to work with the shAirBoxx IAQ monitor. Firstly, it can connect to up to 16 shAirBoxxes simultaneously. The BlackBoxx uses zigbee technology to connect to the shAirBoxxes. It collects data from these shAirBoxxes and can store up to 225,000 data points. This data can be downloaded to a PC via USB.

Secondly, the BlackBoxx has the ability to upload the data from the shAirBoxxes to the internet. It can use a number of different technologies to upload: WiFi, cellular modem, ethernet, and WiMax. Not all buildings have the same or any internet access, so KD Engineering has build in redundancies in the communication technology.

Upload options include our data-hosting website, which will display the data as a table or a graph, as well as offering some statistic analysis. The BlackBoxx can be configured to communicate with your corporate website or intranet. The website can be configured to send email alerts bsed on specific parameters. The BlackBoxx can also transmit an alert if one or more shAirBoxxes goes offline.

The BlackBoxx comes with a color touchscreen which can be used to set up the connections to shAirBoxxes without a laptop computer. The screen displays information on the connected shAirBoxxes such as connection status and can alert the user if one or more shAirBoxxes stops transmitting. The BlackBoxx screen can be used to configure the setup, which means that a laptop or computer is not necessary to setup the connection in the home or office.

IAQ at Work

Air on the Side of Caution

Designed for commercial use, the AirBoxx IAQ monitor is easy to use, versatile, powerful and less expensive than the competition. It is an expandable, hand held monitor that is ideal for walk through surveys and trend logging, with a broad range of sensor options. The base unit includes Carbon Dioxide, Carbon Monoxide, Temperature, and Relative Humidity sensors. It boasts four additional channels for other sensor configurations such as Ozone, Hydrogen Sulfide, Nitrogen Dioxide, Photo Ionization Detector (VOCs), and more.

The AirBoxx can be used as a data logger as well as for walk-through surveys. It has both USB and serial connection. The screen displays real-time readings, and the keypad allows easy navigation though all available parameters.

Features

Walk Thru Survey Mode - Consistent testing parameters yield more reliable data. Locations can be entered on the AirBoxx or can be uploaded via a computer from DataPro. Locations and location groupings can also be saved for easy repeat testing.

Data logging - With its large standard memory, the KD AirBoxx simultaneously records all parameters with a time and date stamp for up to 180 days at one minute intervals.

Location marking - Assigning locations is a simple, straightforward process. 128 locations can be entered. You can filter graphs, tables, and statistical reports by one or more locations.

Flexible intervals - Variable logging intervals, ranging from 15 seconds to one hour.

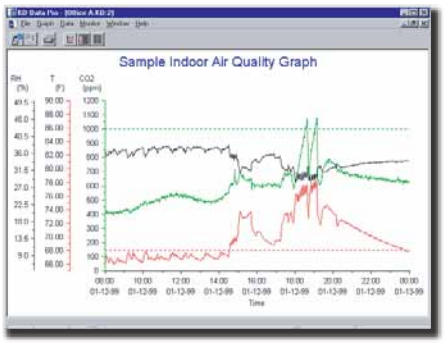
Security - Software security is provided via a user-defined password, which must be entered to view data or change parameters. Optional hardware security is a standard laptop lock.

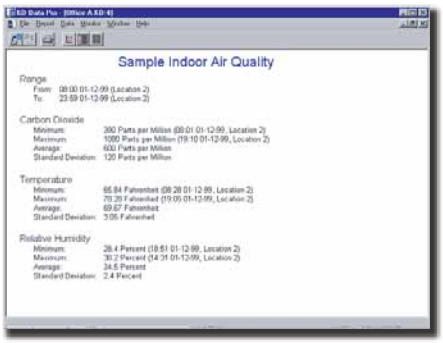
Power - 2 sets of four 2500 mAhr AA batteries and an A/C adapter are included.

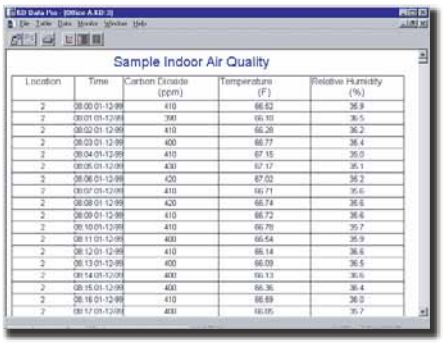
Calibration - Optional user calibration for the KD AirBoxx is a simple, menu driven process, using zero gas and span gas. Factory calibration is also available.

Warranty - The KD AirBoxx comes with a two-year warranty.

Price - With a price point well below it's competitors, the KD AirBoxx is the most comprehensive, affordable IAQ monitor on the market today.







Software - The software is intuitive and easy to use. It generates professional looking reports and graphs, and lets you easily download data into spreadsheet or word processing programs to customize the output.

KD AirBoxx Specifications

CO2 Sensor

Type: Referenced non-dispersive infra-red (NDIR)
Measuring Range: 0 to 10000 ppm*
Accuracy: ±5% of reading or 60 ppm, whichever is greater
Resolution: 1 ppm
Response Time: <60 seconds to 90% of final value

CO Sensor

Type: Electrochemical
Measuring Range: 0 to 200 ppm*
Accuracy: ±5% of reading or 2 ppm, whichever is greater
Resolution: 0.1 ppm
Response Time: <45 seconds to 90% of final value

Temperature Sensor

Type: CMOSens
Measuring Range: 32 to 122°F (0 to 50° C)
Accuracy: 0.5° C (1.0° F)
Resolution: 0.1° F (0.1°C)
Response Time: <30 secs to 90% value
Units: User-selectable (C° or F°)

Relative Humidity Sensor

Type: CMOSens
Measuring Range: 5 to 95 % RH
Accuracy at +25° C: Better than ±2% RH
Resolution: 0.1% RH
Response Time: <15 seconds to 90% of final value

Data Logger

Capacity: 64Mb (4 sensors at 1 min. int. = 180 days data)
Logging Interval: 15 seconds to 1 hour (user-selectable)
Time Weighted Avg: 0, 1, 5, 15, 60 min. (user-selectable)

Dimensions

Weight: 1 lb / 0.45 kg
Dimensions: 6.5" (16.5 cm) x 4" (10 cm) x 1.75" (4.5 cm)

Power

Battery: 4 2500 mAhr AA rechargeable included (8 - 12 hour life)
Life: 8 - 12 hours
Charger: included with 4 additional rechargeable batteries
AC Adapter: included

Optional Sensor Specifications

Ozone

Type: Electrochemical
Measuring Range: 0 to 2 ppm
Accuracy: 0.04 ppm
Resolution: 0.001 ppm
Response Time: 150 seconds to 90% of final value

Hydrogen Sulfide

Type: Electrochemical
Measuring Range: 0 to 100 ppm
Accuracy: 0.2 ppm
Resolution: 0.01 ppm
Response Time: < 45 seconds to 90% of final value

Oxygen

Type: Electrochemical
Measuring Range: 0 to 30%
Accuracy: 0.5%
Resolution: 0.1%
Response Time: < 45 seconds to 90% of final value

Nitrogen Dioxide

Type: Electrochemical
Measuring Range: 0 to 10 ppm*
Accuracy: 0.1ppm (low range) 0.2 ppm (high range)
Resolution: 0.01 ppm
Response Time: < 45 seconds to 90% of final value

Sulfur Dioxide

Type: Electrochemical
Measuring Range: 0 to 20 ppm
Accuracy: 0.2 ppm
Resolution: 0.01 ppm
Response Time: < 45 seconds to 90% of final value

VOC

Type: PID (Photo Ionization detector)
Measuring Range: 0 to 20 ppm
Accuracy: 0.1 ppm
Resolution: 0.01 ppm
Response Time: < 20 seconds to 90% of final value

** higher ranges available*

KD Engineering

KD Engineering is a well-respected, independent HVAC testing agency with over 30 years of expertise in the indoor air quality field. Our IAQ instrumentation division was established in 1991 to better serve the buliding industry. In response to client requests, KD Engineering began manufacturing IAQ monitors. Recognizing the need for economical IAQ monitoring equipment, KD Engineering builds high quality monitors with state-of-the-art technology.

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HOME AIRBOXX
AIRBOXX

better boxes better air

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