

# IAQ-Trender™ System

## Wireless Indoor Air Quality Measurement & Documentation

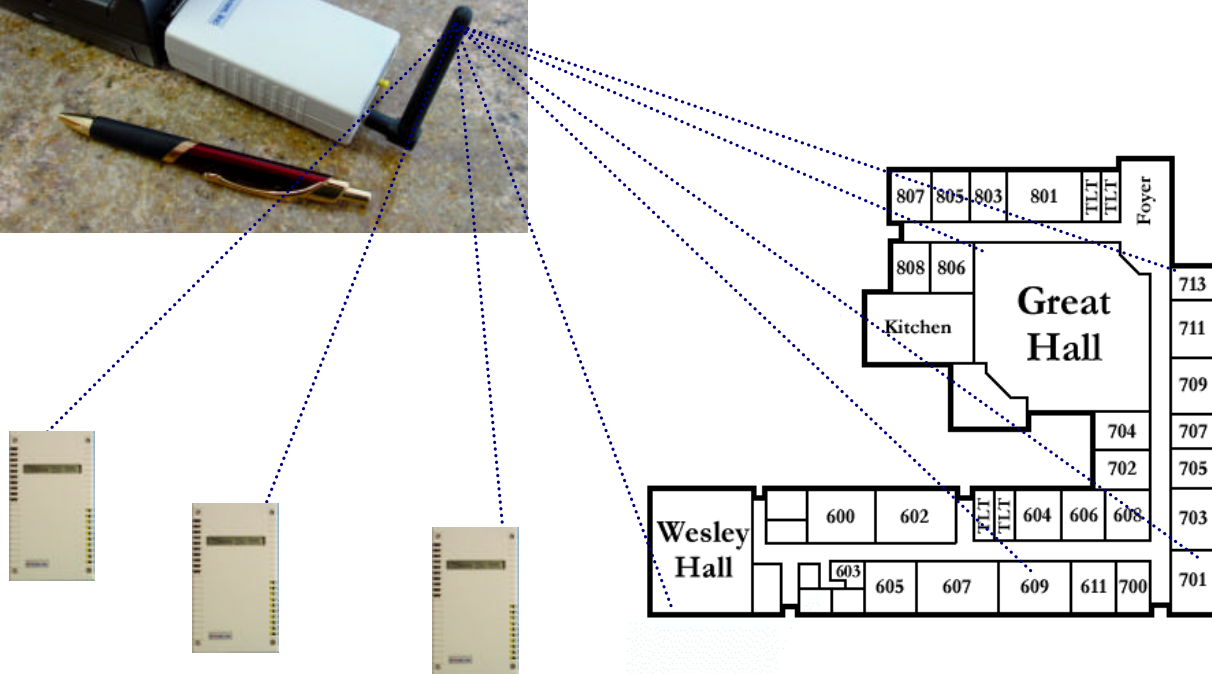
Combining advanced sensor technology with robust wireless communication, Airware, Inc. provides a simple approach to surveying, measuring, and documenting your building or home's Indoor Air Quality (IAQ).

Introductory Special:  
 One IAQ-Trender™  
 Transceiver  
 One Wireless Tri-Sensor  
 IAQ-Trender Software

- ◆ Monitor indoor CO<sub>2</sub> concentrations, temperature, and relative humidity over an entire floor plan. Generate an accurate, real-time picture of your Indoor Air Quality and your building's HVAC system performance.
- ◆ Now you can effectively track conditions leading to mold growth and take intelligent corrective action where necessary. Our software runs the useful Dew Point Temperature calculation.
- ◆ With easy Tri-Sensor installation (all wireless) and PC compatibility of our IAQ-Trender™ transceiver, the IAQ-Trender™ System simplifies IAQ data logging. Capture "floor plan wide" survey data, while saving you time and money.



The IAQ-Trender™ System consists of one IAQ-Trender™ Interface Module and Wireless Tri-Sensors (from 1 to 10). Each Tri-Sensor reports to the IAQ-Trender™ transceiver every 15 minutes.



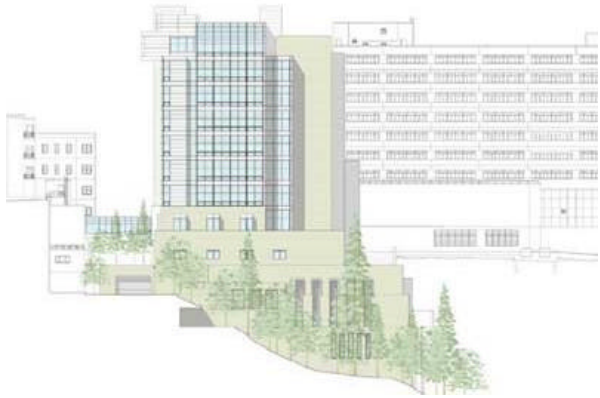
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## The Right Combination of Sensing

**CO<sub>2</sub>** This gas is a measurable parameter for verification of human presence. IC62-1999-27 clarified that CO<sub>2</sub> is an acceptable indicator of the ventilation rate and occupancy in a building. Airware's state-of-the-art CO<sub>2</sub> sensor incorporates advanced calibration algorithms for high accuracy and long-term performance.

**R.H. & Temperature** When relative humidity is kept at about 50%, office workers have fewer respiratory problems and generally feel better. Higher humidity makes an office feel "stuffy". More importantly, higher humidity contributes to development of bacterial and fungal growth, generally labeled as "mold". Humidity lower than 50% causes discomfort by drying out mucous membranes, contributing to skin rashes, and causes electrostatic disturbances to both office equipment and their users. ASHRAE Standard 55-1992 "Thermal Environmental Conditions for Human Occupancy" posts acceptable limits for R.H. and temperature.

TRI-SENSOR SPECIFICATIONS:					
Parameter	Detection System	Range	Accuracy	Repeat-ability	Response Time
CO <sub>2</sub>	Dual beam absorption infrared	0-5,000 ppm	+/- 25 ppm or +/- 5% of reading (500-5,000 ppm)	+/- 25 ppm (22 °C & 760 mm Hg)	< 60 sec for 90% step change
Relative Humidity	Thin film polymer	0 - 100 % R.H.	+/- 1% of reading	+/- 1% per year	< 60 sec (0-90% reading)
Temperature	Silicon I/C	0 - 40 °C (32 - 104 °F)	+/- 0.5 °C		5 min typical

Wireless Operation	
Frequency	902 - 928 MHz
Operation Mode	Sequential Transmitting Asynchronous Receiving System (STARS)
Transmit Power	< 0 dBm (10 milliWatt)
Communication channels	1 to 10 Tri-Sensors per CWT Module
Communication Range	600 m (1500 ft) direct-sight typical
Agency Certification	FCC Part 15 Class B

PC Interface	Interface Protocol	RS-232 (Future - RS-485 Modbus, TCP/IP)
	Data Conversion	IAQ Trender Software (Future - XML)
	Cable Connection	RS-232

Display	LCD readout for CO <sub>2</sub> , R.H., and Temperature		
Keypad	5 Button For Tri-Sensor Set-Up - altitude adjustment, etc.		
Battery	Li/SOCl <sub>2</sub>	Two year life (typical)	P/N: BATMSRL01
R.H. Sensor	Thin Film	Two year life (typical)	P/N: RHMSRT01
Sensor Installation	Wall mount bracket with three screws		

ASHRAE Std. 55-1992	Temperature	% Relative Humidity
Heating Season	20-23.5C° 68-75F°	25 - 60%
Cooling Season	23-26C° 73-79F°	25 - 60%

## Easily Document of Your HVAC System Performance

Airware's IAQ-Trender™ Software simplifies your environmental data collection task. This intuitive software organizes the periodically reported data into useful reports. These reports will provide accurate, real-time analysis of the temperature, moisture level, and CO<sub>2</sub> content of your building environment.

In the near future with additional protocols, this data will be ported to most Building Automation Systems. The IAQ-Trender™ System enables you to demonstrate, on a continuous basis, that your HVAC operation complies with ASHRAE Standard 62.1-1999 governing building ventilation rates. This specification indicates that there shall be no greater than 700 ppm differential between indoor and outdoor levels of CO<sub>2</sub>.

ASHRAE Standard 90.1-1999 requires DCV for all ventilation systems with design outside air capacities greater than 3,000 cfm serving areas having an average design occupancy density exceeding 100 people/1,000 sq ft.

## One Key Benefit of Wireless Sensor Technology - Portability

One CWT Module and Tri-Sensor Set can be moved from floor to floor to characterize the air quality across your entire building.

Connect the IAQ-Trender™ to any RS-232 port and begin collecting your IAQ data.



The small, wireless, battery powered Tri-Sensor incorporates three sensors:

- 1) Temp. (°F)
- 2) R.H. (%)
- 3) CO<sub>2</sub> (ppm)

Specifications herein subject to change without notice or obligation.