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PPMonitor Passive Buildings

Temperature, Humidity, Formaldehyde, Carbon Dioxide and VOC's

SICK BUILDING SYNDROME

Sick Building Syndrome is concerned with a range of symptoms that can effect a workers in various industrial environments.

Common symptoms include:

- Fatigue
- Headaches
- Shortness of breath
- Eye & throat irritation
- Itchy or dry skin
- Nausea

KEY DESIGN FEATURES

- Small and compact design
- Easy to install
- Supplied with PPMonitor software for graphical representation and reports.
- Connect wirelessly via ZigBee technology to produce complete graphical representation of IAQ on user's PC
- Other PPMonitor units can be added to the wireless mesh network to view other problem areas. This gives a more detailed representation of a buildings IAQ as a whole
- Capable of remote monitoring and triggering alarms
- Proven excellent long-term sensor stability
- Supplied with Calibration Certificate for sensors

APPLICATIONS: for use in Passive Buildings.

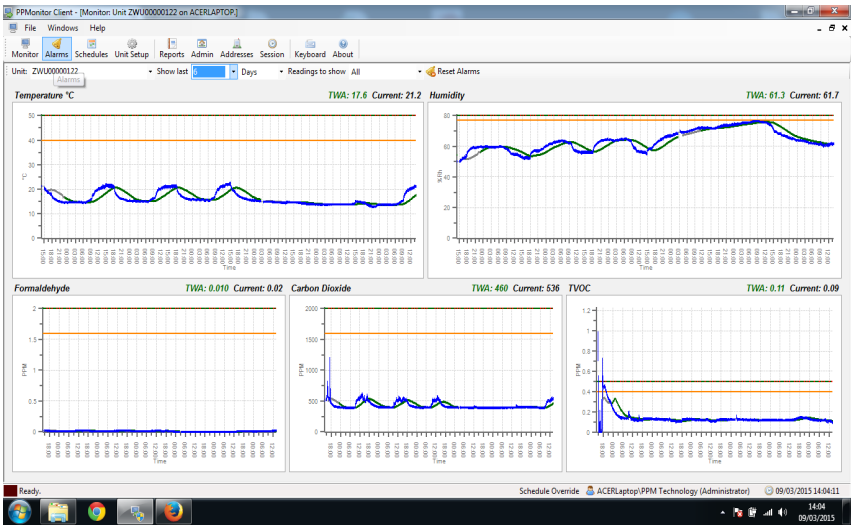
Passive Buildings are highly energy efficient due to their high level of insulation and airtight design. There are concerns that indoor air quality priorities have been sacrificed for these "green" objectives.

Significant health risks can arise in passive housing since there is an abundance of airborne chemicals indoors (cleaning materials, decorating materials furnishings) and only very little (if any) essential fresh air is supplied to dilute the indoor pollutants. These state of the art homes can be built using man made materials such as specially designed Structural Insulated Panels (SIPs) composed of foam and OSB chip board. The OSB wood panels are proven to off-gas Formaldehyde – a Category 1, Carcinogen.

Although ventilation systems are commonly used for improving indoor air quality in passive buildings, they are not the most effective long term solution as they need regular servicing and often filter changes. This is a time consuming task and long-term maintenance on the ventilation system must be carried out in order to assume the air quality is at the least, adequate.

The monitoring of Temperature, Humidity and Carbon Dioxide are all energy efficiency indicators relating to building comfort and adequate ventilation.

Toxic Volatile Organic Compound (VOC) gases are emitted from many building products. They are partially responsible for an increase in respiratory and other serious health conditions. Many VOC's are now also recognised as known carcinogens and are linked to an increase in cancer.



Blue Lines are actual concentration values.

Green Lines are Time Weighted Average (TWA) readings. The lines of the graph appear much smoother as a result of the fact that the values are a running average over 8 hours.

PLEASE NOTE

Minimum Requirements: Windows 7 Pro or Windows 8/ 8.1

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UNIT SPECIFICATIONS

- Dimensions:
  145 x 145 x 55mm
- Operating Range:
  0-40°C, 15-90% RH
- Data Logging Frequency:
  1 minute
- Installation: Wall mounted via VESA standard bracket.
- Mains or Battery Powered:
  12v DC via external DC adaptor with 2.5mm diameter jack plug

ZIGBEE WIRELESS SPECIFICATIONS

- Low Power 2.4GHz IAN Band
- Data Rate: 250kbit/s over the air data rate channels 16 channels
- Power:+3dBm output, +5dB boost mode
- Sensitivity: High sensitivity of – 98dBm typical at 1% packet error rate
- Different antennae options for the different network coverage required

SERVICES AVAILABLE

- Technical Support
- Hardware Support
- Skype & Team Viewer Support
- Factory Calibration & Service
- Upgrades
- Bespoke System Development

The PPMonitor Passive Buildings has been designed to give a detailed visual representation of indoor air quality in a building, as part of the home management standards. The system can show precise changes in concentration of the IAQ parameters over time.

The PPMonitor Passive Buildings enables the user to control and run the IAQ sampling units via the sophisticated and reliable ZigBee wireless network.

The Manager PC connects to the Zigbee network via a wireless USB dongle; which is capable of transmitting and receiving information from the PPMonitor Home monitoring units.

The Manager PC can view, run and control the real-time monitoring and data logging of air quality in a building at the click of a button by accessing and utilising the PPMonitor software.

The PPMonitor software enables the data to be viewed graphically, produce reports and statistical data, run schedules as well as alarm functions and notifications.

It is possible to set up an Ethernet Access Point (EAP) to the wireless network. This allows the wireless modules to be accessed from any location worldwide via the Internet; provided the necessary internet address, firewalls and gateways are enabled on the local network.

Temperature °C /°F and Relative Humidity%

Temperature and Relative Humidity are common IAQ factors implicated in occupant discomfort. In terms of a building's air quality, elevated temperatures increase the off gassing of hazardous gases from building materials. High % Relative Humidity conditions favour mold and bacterial growth.

- Interchangeable digital CMOSens®
- Accurate to ±0.4°C, ±3% RH . Optional upgrade to ±0.3°C, ±1.8% RH
- Calibrated to ISO/IEC17025. Traceable to NIST and the 'National Physical Laboratory'.

Formaldehyde (HCHO)

Formaldehyde has been classified as a known human carcinogen. The risk of cancer will increase proportionally with concentration and duration of exposure. Formaldehyde is widely used in manufacturing plastics, resins, urea-formaldehyde foam insulation and found in building's construction materials such as wood.

- Electrochemical Sensor
- Measures 0-10ppm HCHO
- Extended range available on request
- Resolution 0.01 ppm (1 ppb available) Precision 2%

Carbon Dioxide CO_2

High CO_2 level indicate a problem with overcrowding or inadequate outdoor air ventilation rates.

CO_2 levels increase markedly during periods of human activity. CO_2 concentrations above 1,000ppm cause occupants to feel sluggish.

- Non Dispersive Infra Red (NDIR) sensor
- Measures 0-2000 ppm CO_2
- Accurate to ±30 ppm ±5% measured value
- Automatic Background Calibration

Volatile Organic Compounds VOCs

Many products indoors can off-gas VOCs including cleansers, disinfectants, glues, paints, varnishes and preservatives. Many household materials are also sources of VOCs: new carpeting, adhesives; wood products; vinyl-type flooring and wall coverings to name a few. Studies have shown that the level of VOCs indoors is generally two to five times higher than outdoors.

- Photo Ionisation Detector (PID)
- Measures 0-50 ppm
- Lamp energy 10.6 eV
- Calibrated to Isobutylene
- Minimum detection level: 1 ppb

EXTENDED TECHNICAL SPECIFICATIONS AVAILABLE ON REQUEST

ISO 9001
REGISTERED FIRM

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