

AIR QUALITY SENSOR

MODEL AIR 3000

TYPICAL APPLICATIONS:

- ◆ Office Buildings (Commercial, Government, Public, Schools, Etc.)
- ◆ Smoke Evacuation, such as Industrial, Cooking, Etc. (Not for Fire Safety)
- ◆ Diesel Exhaust
- ◆ Welding Shops
- ◆ Gambling Casinos, Bars, and other Entertainment Establishments (Cigarette Smoke)
- ◆ Washroom Ventilation Fans

FEATURES:

- ◆ True Air Quality Monitoring
- ◆ Microprocessor Controlled
- ◆ Analog Stepped Output (ASO)
- ◆ 10 bit resolution
- ◆ Integral sensitivity adjustment
- ◆ Visual indication of air quality (Internal)



Sensor Types shown: (Left) Air3000 Space Mount, (Right) Air3000 Duct Mount

GENERAL DESCRIPTION:

The Model Air 3000 is a microprocessor-based air quality monitor utilizing metal-oxide semiconductor technology. This is a full spectrum sensor sensitive to a wide variety of air pollutants such as Smoke, Hydrocarbons, Benzene, Alcohols, Hydrogen, Esters, etc. The unit is temperature compensated and effects from humidity are zeroed out.

This sensor is well suited to measuring overall air quality than a sensor which measures only Carbon Dioxide. The AIR 3000 yields a true indication of the actual air quality, rather than occupancy. For example, if a person were to smoke a cigarette in a room, the Carbon Dioxide sensor would be inadequate for detecting this, even though the air quality has significantly degraded. This same set of circumstances holds true for many other contaminants such as solvents, fuels, and even Carbon Monoxide, all of which are much more harmful than Carbon Dioxide.

When measuring air quality, it is not so much the type of contaminant that is of concern, but rather the presence of contaminants that is of concern. The sensor does not indicate what is contaminating the air, but rather if and by how much it is being contaminated.

The Toxalert AIR 3000 sensor works by monitoring the signal from the full spectrum sensor, judges the degree of pollution, and provides a configurable corresponding output signal. Configuration of the output (analog signal, stepped analog, relay, etc.) can be customized depending on the application. For the unit to perform efficiently it must work as a sensor/controller, i.e. must be able to act upon level changes. The output is represented as a single 0 - 10 VDC output which has four user adjustable settings, corresponding to clean, low, mid, and high levels. This output can be used to directly control an actuator, or be sent back to a Toxalert controller, a computer, or a direct digital controller.

The AIR 3000 sensor can be configured to run auto or manual mode and has an integral sensitivity adjustment to provide the user the optimum settings to monitor a specified area. There are internal LED indicators to show microprocessor status and also a manual override feature to assist in installing the unit.

SPECIFICATIONS:

Supply Voltage:	20-30vac/vdc
Supply Current:	220 mA (max.)
Operating Temperature:	0-40°C (32-104°F)
Operating Humidity:	0-95% non-condensing
Standard Output:	0 - 10 VDC (ASO)
Optional Outputs:	Linear output; 0-100% pollution level, Form C contact, 5A @ 250vac
Output Impedance:	> 1K ohms

**SOME COMMON POLLUTANTS DETECTABLE
BY TOXALERT INTERNATIONALS IAQ SENSOR**

CHEMICAL

Methyl Ethyl Ketone
 Acetone
 Ethyl Alcohol
 Formaldehyde
 Hydrogen
 Methyl Alcohol
 Vinyl Chloride
 Hydrogen Sulfide
 Methyl Chloride
 Benzene, Toluene, Xylene
 Trichloroethylene
 Propane
 Carbon Monoxide
 Freon-22
 Ammonia
 Methane
 Tobacco Smoke

COMMON SOURCE

Solvents and cleaning products
 Solvents and organic synthesis
 Solvents and liquor fermentation
 Disinfectants and preservatives
 Used in synthetics
 Solvents, antifreeze and synthetics
 Textiles and polymers
 Water and putrefying matter
 Solvents, paints and refrigerants
 Solvents and motor fuels
 Solvents and cleaning agents
 Fuels and chemical synthesis
 Combustion of carbon
 Refrigerants and aerosols
 Solvents and refrigerants
 Decomposition and synthesis