

**AIR QUALITY SENSOR**

**MODEL TOXVOC**

## TYPICAL INSTALLATIONS:

**Office Buildings**  
**Smoke Evacuation such as Industrial**  
**Governmental Garages**  
**Diesel Smoke**

**Welding Shops**  
**Gambling Casinos, Bars**  
**Entertainment Establishments (Cigarette Smoke)**  
**Washroom Ventilation Fans**

## GENERAL DESCRIPTION:

The TOXVOC Indoor Air Quality Sensor uses an advanced MEMS metal oxide semiconductor sensor to detect poor air quality. The sensor reacts quickly to detect a broad range of VOCs such as smoke, cooking odors, bio-effluence, outdoor pollutants and from human activities. The sensor captures all VOC emissions that are completely invisible to CO<sub>2</sub> sensors. The TOXVOC provides a linear analog signal output of 0-5 or 0-10 VDC for connection to a building automation system as well as an analog stepped output of 0-10Vdc. Optional features such as a temperature sensor, manual override and adjustable relay output are available.

## TYPICAL INSTALLATION:

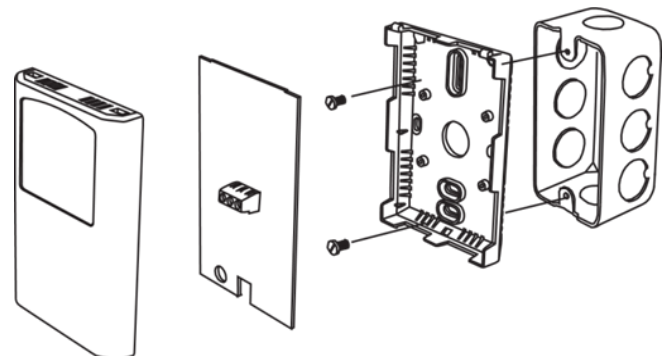
**For complete installation and wiring details, please refer to the product installation instructions.**

The TOXVOC series can be mounted directly to a single gang electrical box or directly to a wall. The backplate includes many mounting hole configurations to allow for mounting on a variety of electrical boxes.

The basic TOXVOC has a 4 wire configuration with a screw block terminal provided for connection to the Building Automation System.



**AIR4100**



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**STANDARD FEATURES:**

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

The Toxalert TOXVOC 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 signal 0—10 VDC output which has four user adjustable settings, corresponding to clean, low mid, and high levels. This output can be use to directly control an actuator, or be sent back to a Toxalert controller, a computer, or a direct digital controller.

The TOXVOC 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.

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**SPECIFICATION:**

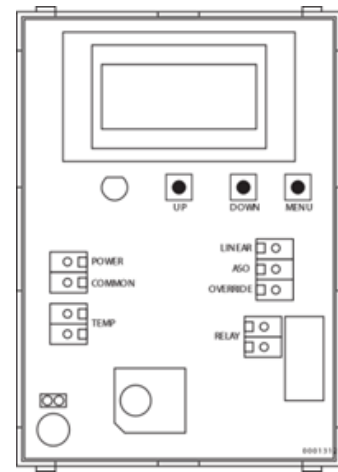
Sensing Technology	MEMS metal oxide semiconductor VOC sensor	LCD Backlight	Enable or disable via menu
Measurement Range	450-2000 ppm CO2 equivalent or 0-100% (menu selectable)	LED Indicator	Tri-color (Good = Green, Fair = Blue, Poor = Red), enable or disable via menu
Drift Compensation	Automatic baseline correction	Wiring Connections	Screw terminal blocks (14 to 22 AWG)
Power Supply	20-28 Vac/dc non-isolated half-wave recited)	Enclosure	Wall mount enclosure, White ABS
Consumption	35 mA max @ 24 VDC		IP30 (NEMA 1) 84 w x 119 h x 29 d mm (3.3”w x 4.7”h x 1.15”d)
Input Voltage Effect	Negligible over specified operating range	Weight	122 gm (4.3 oz)
Protection Circuitry	Reverse voltage protected, over voltage protected	Optional Override Switch	Front panel switch with FET
Operating Conditions	0-50 °C (32-122 °F), 5-95 %RH non-condensing		output, 30 VDC @ 50 mA max
Linear Output Signal	0-5 / 0-10 VDC (menu selectable) = 0-2000 ppm CO2 equivalent	Optional Relay Output	Form A contact (N.O. or N.C.) 2 Amps @ 140 Vac, 2 Amps @ 30 VDC (Relay action, trip point and hysteresis set via menu)
Analog Stepped Output Signal	Three steps representing Good, Fair and Poor air quality (each step is independently adjustable from 0-10 VDC)	Optional Temperature Sensor	Various thermistors and RTDs, 2-wire resistive output
Output Drive Capability	10 K <sub>Ω</sub> minimum		
Programming and Selection	Via internal push-buttons and LCD menu		
Warm-up Time	5 minutes		
LCD Resolution	1 ppm / 1 %		
LCD Size	1.4” w x 0.6” h (35 x 15 mm) alpha-numeric 2 line x 8 characters		

## PCB/WIRING INFORMATION

### Terminal Function

POWER		Power input
COMMO	N	Power and Signal COMMON
LINEAR		Analog Output 0-5 or 0-10 VDC
ASO		Analog Stepped Output 0-10 VDC
OVERRIDE		Digital Output
*TEMP		Resistive Temperature Sensor
*TEMP		Resistive Temperature Sensor
*RELAY		Relay Output
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\* Terminals only present if option ordered



## SOME COMMON POLLUTANTS DETECTABLE BY TOXALERT INTERNATIONALS IAQ SENSOR

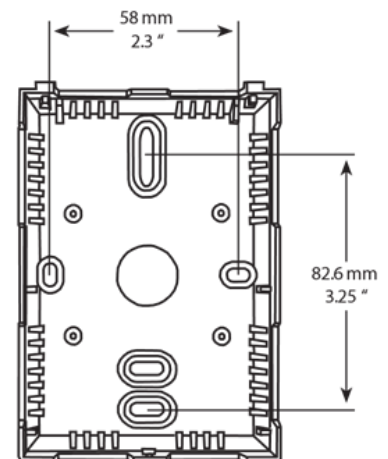
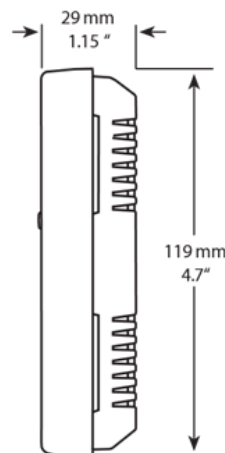
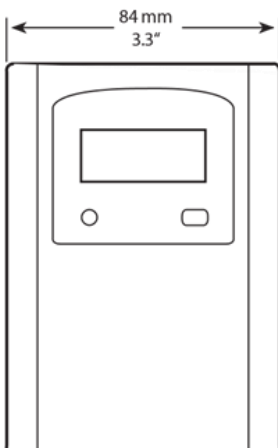
### CHEMICAL

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

### 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  
 Tobacco Smoke

### DIMENSIONS:



TOXVOC 5/18