

## OXYGEN (O<sub>2</sub>) DEPLETION MONITOR

## MODEL TOX-OXY 2

### TYPICAL INSTALLATIONS:

Hospital MRI Rooms  
Liquid Nitrogen Storage  
Pharmaceutical Industry  
University Labs  
Blood Banks

Mechanical Rooms In:  
\*Commercial Building  
\*Colleges/Universities  
\*Sports Facilities  
Chemical Plants

### GENERAL DESCRIPTION:

Toxalert's Model TOX-OXY2 Oxygen Depletion Monitoring System consists of one or more remote oxygen sensors and a controller which is normally mounted outside the monitored room door. Once it detects oxygen levels below normal threshold settings it demands ventilation and/or signals an audible alarm.

The controller's first stage of "Warning (Purge) stage" activates an amber LED and a set of relay contacts to operate a fan(s) or other mechanical equipment. The second stage or "Alarm Stage" activates a red LED, and audible alarm and an auxiliary set of contacts. A "Purge" switch on the face of the controller has 2 positions—ON & AUTO.

The remote oxygen sensor(s) Model TOX-O2/1 is continuously monitored by the controller for sensor failure. If the sensor malfunctions, a visual alarm will activate.



**TOXOXY2  
W/ Optional Display**

### STANDARD FEATURES:

- Warning (purge) stage indication
- Alarm stage indication
- Relay outputs for remote control and alarming
- Operating range meets AHSRAE recommendations
- Optional-BACnet MS/TP RS485
- Sensor malfunction indication
- Audible Alarm
- Interface to Automation System
- Multiple sensor inputs optional
- Optional Digital Display of % Oxygen
- Optional—Analog Output 0-10vdc or 4-20mA

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## SPECIFICATIONS

- **Type:** Electro-chemical cell diffusion barrier type
- **Range:** 0 to 25% Oxygen
- **Response Time:** 10 seconds to 90% indication
- **Warning Set Point:** Field adjustable, factory set @19.5%
- **Alarm Set Point:** Field adjustable, factory set @ 18.5%
- **Input Power:** 120VAC, 1 amp
- **Relay Outputs:** 5 A @ 120 VAC resistive load
- **Operating Temperature:** 5°F to 95° F (-15°C to 35° C
- **Relative Humidity:** 90% RH non-condensing
- **Pressure:** .75 to 1.25 atmospheres
- **Gas:** Oxygen (O<sub>2</sub>)
- **Sensor Life:** 10 Years
- **Zero Drift:** Less than 5% per month
- **Warning Stage Outputs:** Visual Indicator; Form C relay outputs, @ 120 VAC, 5A
- **Alarm Stage Outputs:** Visual Indicator, Audible Horn, with Silence Switch; relay output, 5A @ 120VAC
- **Sensor Malfunction Output:** Visual indicator
- **Dimensions:**  
Controller: 14"H x 12" W x 4"H  
Sensor: 8.5"H x 4"W x 4.2"D

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## GUIDE SPECIFICATIONS

Provide a Toxalert Model TOX-OXY2 oxygen depletion Detection and Control system as specified.

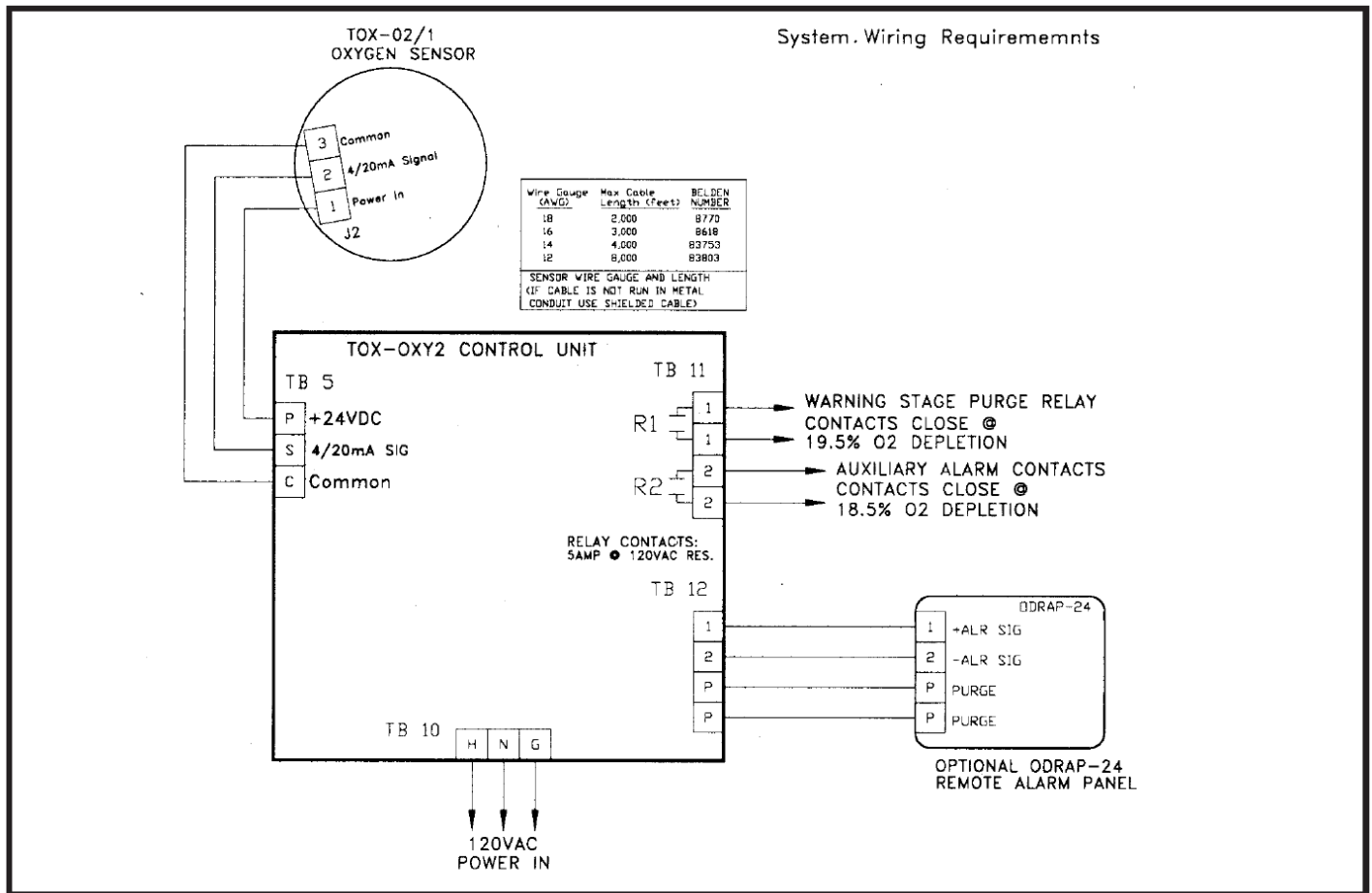
The oxygen sensor(s) shall have a range of 0 to 25% and a linear 4 to 20mA output signal over its range. The sensor shall be housed in an industrial style explosion proof housing. The sensing element shall be electro-chemical diffusion barrier type and be designed for ten(10) year element life. Sensors with a 3 year or less expected life are not acceptable. The sensor shall be powered by low voltage and its 4 to 20mA output shall be directly proportional to the percent of oxygen being detected. When sensor fails it shall drive its output signal to zero indicating alarm condition.

The oxygen sensor shall have the following diagnostic LED's: 1) Power; 2) Sensor Failure; 3) LOOP UP (LED varies in intensity indicating 4 to 20mA loop current to controller). Sensor shall have volt meter terminals on face of sensor to indicate percent oxygen being detected.

The controller shall monitor the oxygen sensor(s) and shall have two modes to control. The first mode "warning" shall light an amber warning lamp and start the mechanical room ventilation (or purge) system. The second mode "alarm," shall light a red alarm light and sound the audible alarm. The audible alarm shall have momentary push button silence switch to silence the audible alarm. The audible alarm, after being silenced, shall automatically reset and sound again at the next occurrence.

When the oxygen level drops to 19.5% the "warning" mode shall be activated. When the oxygen level drops to 18.5% the alarm mode shall be activated. Contact outputs shall be supplied for "warning" and "alarm" modes. The controller panel front shall include the following labeled indicator light and control switches,

1. Power to system light.
2. Labeled "warning" level indicator light for each sensor
3. Labeled "alarm" level indicator light for each sensor
4. Audible alarm & silence push button
5. Purge switch to manually activate the mechanical room ventilation equipment.
6. Sensor malfunction light



**DRAWING 1**  
**SYSTEM WIRING EXAMPLE**

**ORDERING INFORMATION**

**Part No.**  
**TOX-OXY2**

**Description**  
Control unit to include power on indicator warning stage indicator and SPST relay contact, alarm stage indicator and SPST relay contact, purge switch, sensor malfunction indicator, and audible alarm with silence.

**TOX-O2/1**

Oxygen depletion sensor, range 0-25%

**Options & Accessories**

**DDM**

Digital display meter of oxygen concentration mounted on front of control unit.

**STROBE**

Strobe light mounted on control unit.

**ODRAP-24**

Remote alarm panel to include alarm indicator, audible alarm with silence and purge switch.

**RH-Voltage**

Remote horn, specify voltage - 24 VAC, 120 VAC, 12 VDC or 24 VDC

**RS-Voltage-Color**

Remote strobe, specify voltage - 24-48 VDC, 120 VAC;  
Specify color - Red, amber, blue or green.

The following is a list of sensors manufactured and distributed by TOXALERT International, Inc. This list is not meant to be an all inclusive list. If you have need for other sensors, please contact us.

SENSOR	SYMBOL	STANDARD RANGES
• Ammonia	NH <sub>3</sub>	0 to 50 PPM
• Carbon Monoxide	CO	0 to 400 PPM
• Carbon Dioxide	CO <sub>2</sub>	0 to 2000 PPM and 0 to 5000 PPM
• Chlorine	CL <sub>2</sub>	0 to 20 PPM
• Combustible		
Methane	CH <sub>4</sub>	0 to 100% LEL
Natural Gas		0 to 100% LEL
Propane	C <sub>2</sub> H <sub>2</sub>	0 to 100% LEL
Hydrogen	H <sub>2</sub>	0 to 100% LEL
• Hydrogen Chloride	HCL	0 to 20 PPM
• Hydrogen Cyanide	HCN	0 to 20 PPM
• Hydrogen Sulfide	H <sub>2</sub> S	0 to 200 PPM
• Nitrogen Dioxide	NO <sub>2</sub>	0 to 10 PPM
• Nitric Oxide	NO	0 to 20 PPM
• Oxygen	O <sub>2</sub>	0 to 25%
• Sulfur Dioxide	SO <sub>2</sub>	0 to 100 PPM
• Refrigerant		0 to 300 PPM for most refrigerants 0 to 30 PPM for R123

