

*The Model TOX45-XX Series Toxic Gas 2-wire gas sensor modules allow easy direct connection to Toxalert Tox4 and ToxControl Controllers and many DCS, PLC and other control devices. The sensor module is best in class for ease of installation, reliable operation, ease of use, and, with 180 day calibration cycle, low cost of operation.*

The TOX45-XX Gas Sensor Module utilizes the electrochemical cell to monitor for the specified gas over various gas specific ranges. This compact Module requires minimal maintenance. Internal continuous self-diagnostics will automatically indicate any fault problems. The TOX45-XX is best in class providing all the built-in features desired by instrumentation and safety professionals, including:

- Industry's longest calibration interval of 180 days
- 2-wire loop powered for easy installation and direct interface to common PLC and DCS as well as Toxalert controllers.
- Integral scrolling LCD 2-line, 16 character display
- Non-intrusive one-person calibration
- aluminum or 316 Stainless Steel enclosure
- 4-20 mA output
- Long sensor life
- Robust RFI immunity
- Ability to rotate face plate to enable the enclosure to be mounted in any orientation.

TOX45-03	Oxygen, O <sub>2</sub>
TOX45-04	Carbon Monoxide, CO
TOX45-05	Hydrogen Sulfide, H <sub>2</sub> S
TOX45-06	Chlorine, Cl <sub>2</sub>
TOX45-08	Chlorine Dioxide, ClO <sub>2</sub>
TOX45-10	Sulfur Dioxide, SO <sub>2</sub>
TOX45-12	Nitrogen Dioxide, NO <sub>2</sub>
TOX45-25	Ammonia, NH <sub>3</sub>
TOX45-26	Hydrogen Fluoride, HF

#### Model TOX45 Series Sensors



**Toxic Gas Sensor Module  
2 – Wire Series  
Model TOX45-xx**

#### How It Works

Electrochemical sensors are fuel cell-like devices consisting of an anode, cathode, and electrolyte. The components of the cell are selected so a subject gas, allowed to diffuse into the cell, will cause a chemical reaction and generate a current. The cells are diffusion limited so the rate the gas enters the cell is solely dependent on the gas concentration. The current generated is proportional to the rate of consumption of the subject gas in the cell.

TOXALERT'S electrochemical sensors provide improved reliability by allowing the gas to diffuse into the sensor through a capillary port, rather than diffusing through membranes. The result is an extremely stable sensor with very low temperature and pressure coefficients and the capability to monitor gas as ppm (toxics).

## 2-Wire Toxic Gas Sensor Module Model TOX45-XX

### Specifications:

Performance	Max. Gas Range (1)	Resolution	Response Time (2)	Sensor Life
TOX45 -03 O <sub>2</sub>	0 - 25 % Vol	0.2 % Vol.	< 10 Seconds	20 Months
TOX45 -04 CO	0 - 1000 PPM	0.5 PPM	<25 Seconds	2 Years
TOX45 -05 H <sub>2</sub> S	0 - 100 PPM	0.1 PPM	<30 Seconds	2 Years
TOX45-06 Cl <sub>2</sub>	0 - 10 PPM	0.1 PPM	<60 Seconds	2 Years
TOX45-08 ClO <sub>2</sub>	0 - 3 PPM	0.1 PPM	<60 Seconds	2 Years
TOX45 -10 SO <sub>2</sub>	0 - 100 PPM	0.5 PPM	<20 Seconds	2 Years
TOX45-12 NO <sub>2</sub>	0 - 20 PPM	0.2 PPM	<35 Seconds	2 Years
TOX45 - 25 NH <sub>3</sub>	0 - 100 PPM	1.0 PPM	<30 Seconds	(3)
TOX45-26 HF	0 - 10 PPM	1.0 PPM	<90 Seconds	(3)

- (1) Other ranges available
- (2) To 90% range
- (3) Ammonia and HF sensor  
Requires electrolyte  
recharge up to one (1)  
Year "intervals".

### Output:

Display: LCD, 2-line, 16-characters  
Signal Output: 2-wire sensor powered analog 4-20mA  
(Trouble: 3.6 mA)

Loop Resistance: 800 ohm

### Electrical Data:

Power Consumption: 0.2 watts  
Connection Type: 2-wire, loop-powered  
Input Voltage: 24 VDC nominal: 14-30VDC  
RFI/EMI Protection: EN50081-2, EN50082-2

### Operating Range:

Ambient Temp Range:  
Standard: -4° to 122°F (-20° to 50°C)  
TOX45-25/26 14° to 113°F (-10° to 45°C)  
Extended Temp: Sensor and 4-20mA will continue to operate  
to -40°F (-40°C) but the LCD display will decay  
over time if exposed to temperatures below  
-4°F (-20°C) for significant time (not for TOX45-25)  
Storage Temp: -4°F to 122°F (-20° to 50°C)  
Relative Humidity:  
Standard: 15-90%  
TOX45-25 NH<sub>3</sub> 20-90%

### Construction:

Dimensions: 7.0 x 3.6 x 4.0 in. (H x W x D)  
(17.8 x 9.1 x 11.2 cm.)  
TOX45-25/26 8.4 x 4.4 x 3.9 in (H x W x D)  
(21.3 x 11.2 x 9.9 cm.)  
Weight: 2.2 lb. (1.0 Kg) Al  
4.6 lb. (2.1 Kg) SS  
TOX45-25/26 3.0 lb. (1.3 Kg) Al  
5.0 lb. (2.3 Kg) SS  
Enclosure: Nema 4X, Nema 7  
Aluminum or Stainless Steel

Limited warranty: 1 Year

*Specifications subject to change without notice*

### Ordering Information:

Model	Gas	Enclosure
TOX45 Series	-03 = O <sub>2</sub>	- A1 (Aluminum)
	-04 = CO	- S1 (Stainless Steel)
	-05 = H <sub>2</sub> S	
	-06 = Cl <sub>2</sub>	
	-08 = ClO <sub>2</sub>	
	-10 = SO <sub>2</sub>	
	-12 = NO <sub>2</sub>	
	-25 = NH <sub>3</sub>	
	-26 = HF	

### Accessories

4511-00	Rainshield
4511-02	Rainshield with calibration port
4558-01	Calibration Adaptor, Standard
4558-51	Calibration/configuration magnetic tool
4560-00	Calibration gas delivery fitting

**Example:** TOX45-04-A1=CO Sensor with aluminum enclosure

TOX45-xx  
4.12