

HYDROGEN SENSOR

MODEL TOX-H₂/ANA

FEATURES:

- Linear 4-20mA output signal
- Automatic low sensitivity check
- Power up & calibration delays
- Convenient diagnostics

BENEFITS:

- Industry standard signal can be directed to most controllers.
 - Reliable operation and monitoring integrity.
 - False alarm avoidance.
 - Simple maintenance.
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GENERAL DESCRIPTION:

The Toxalert hydrogen sensor module is designed for use in conjunction with Toxalert and other standard 4-20 mA loop controllers. The module sources an output current in proportion to the hydrogen concentration. Toxalert utilizes hydrogen sensors that are electrochemical cells. They are the self-powered, diffusion limited, metal-air battery type. The rate at which atmosphere gases can get to the electrode through a diffusion barrier is then solely dependent on concentration of gases in the atmosphere. Current is generated that is proportional to the rate of consumption of hydrogen in the cell.



Previous electrochemical sensors of this general type have used very thin plastic membranes. This results in handling and stability problems and high temperature and pressure coefficients which limit the usefulness of the device. The Toxalert sensor takes a radically different approach by allowing gas to diffuse into the sensor through a simple capillary. Not only is this extremely robust and stable, but entirely different diffusion laws apply resulting in low temperature and pressure coefficients and the capability to monitor gas as a percent volume.

SPECIFICATIONS:

- **Type:** Electrochemical cell-diffusion barrier type
 - **Range:** 0 to 1000 ppm hydrogen in air
 - **Response Time:** 30 seconds to 85% indication
 - **Typical Life:** Two years in normal service
 - **Operating Temperature :** 4° to 122°F
-20° to 50°C
 - **Relative Humidity:** 15 to 90% RH non-condensing
 - **Electrical Data:**
 - Input Voltage:** 14 – 30 vdc
 - Input Power:** 1.4 Watt
 - Input Current:** 40 mA @ 28 vdc
 - Loop Resistance:** 800 Ohms
 - Output Signal:** Linear 4 to 20 mA
 - Signal Output-Trouble:** 0 mA
 - Wiring:** 3 wire non-isolated
 - **Unit Construction:**
 - Mounting:** Conduit ¾" NPT or flexible cable
 - Housing:** Explosion proof (Nema 7)
(Div 1, Class 1, Groups C, D)
 - Physical:** H: 7.6", D: 4.6", W: 4.2"
 - Weight:** 2.7 pounds
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Gas Sensor Modules available from Toxalert include:

Ammonia (NH₃)
Combustible Gas
Carbon Monoxide (CO)
Carbon Dioxide (CO₂)
Chlorine (Cl₂)
Oxygen (O₂)
Hydrogen (H₂)
Hydrogen Chloride (HCl)
Hydrogen Cyanide (HCN)
Hydrogen Sulfide (H₂S)
Nitric Oxide (NO)
Nitrogen Dioxide (NO₂)
Ethylene Oxide (ETO)
Refrigeration
And more....