

# Model GT810 Toxic Gas Sensor with 4-20 mA output



- **Maintenance free electrochemical cell element**
- **Stainless steel construction**
- **Explosion proof sensor housing**
- **24 volt DC nominal operating voltage**
- **Loop powered transmitter requires only two wires between sensor and 4-20 mA input device**
- **Suitable for connection to any 4-20 mA input device, including SST NOVA-5000 modules, PLC's, SCADA or distributed control systems.**

The SST Model GT810 series of Toxic Gas Sensors are used to determine the concentration of gas accumulated in a protected area and transmit this information to a central control point. The SST sensors use an electrochemical fuel cell with a patented diffusion barrier. Located inside a stainless steel flameproof housing, the sensing element is exposed to the detected gas through a sintered stainless steel flame arrestor.

The three electrode toxic gas micro fuel cells are designed to be maintenance free and stable over long periods of time. They use a capillary diffusion barrier technology which results in a direct response to volume concentration. A high reserve of electrochemical activity insures a long life and excellent temperature stability. The performance is relatively unaffected by humidity, provided that conditions are non-condensing.

Each SST Model GT810 Toxic Gas Sensor includes a high reliability loop powered electronic transmitter. This transmitter converts the signal from the fuel cell element to a standard 4-20 mA signal. This signal may be connected to a suitable SST NOVA-5000 Gas Detection Module, or to any other device with a standard 4-20 mA input. Connections between the transmitter and control device are normally made with 2 conductor cable.

The Model GT810 is suitable for the most demanding applications. A large body mass insures excellent vibrational characteristics when used for offshore use. Corrosion resistant materials permit uses in most environments.



## ARCHITECT'S AND ENGINEER'S SPECIFICATIONS

Toxic gas sensing capability shall be provided by toxic gas sensors suitable for detecting (*name of gas*), contained in stainless steel explosion proof housings. The sensor shall include a transmitter card which converts the measured gas concentration in parts per million (PPM) to the industry standard 4-20 mA signal. The sensor shall be suitable for offshore use, and the manufacturer's data shall so state. Two conductors shall be required between the sensor transmitter and the associated control device. Safety Systems Technology Model GT810 Toxic Gas Sensors, or approved equivalent, shall be supplied.

## TECHNICAL SPECIFICATIONS

<b>Power Supply:</b>	24 volts DC nominal Loop powered transmitter will operate within specifications at any supply voltage between 10 and 35 volts DC.
<b>Loop Resistance:</b>	700 ohms maximum at 24 VDC operating voltage Loop resistance for other supply voltages must maintain at least 10 volts DC operating voltage at the transmitter.
<b>Sensor output:</b>	0.3 to 1.75 microamps per PPM Converted to 4-20 mA by transmitter card.
<b>Response time:</b>	20 seconds (SO <sub>2</sub> ) 35 seconds (CO or NO <sub>2</sub> ) 60 seconds (H <sub>2</sub> S) 90 seconds (NH <sub>3</sub> or CL <sub>2</sub> ) Maximum time required for measured concentration to reach 90% of the final concentration.
<b>Operating Temperature:</b>	-40 to +167° F, -40 to +75° C (H <sub>2</sub> S, SO <sub>2</sub> ) +23 to +131° F, -5 to +55° C (CO) -13 to +131° F, -25 to +55° C (NH <sub>3</sub> ) + 5 to +131° F, -15 to +55° C (CL <sub>2</sub> ) -4 to +131° F, -20 to +55° C (NO <sub>2</sub> ) All sensors may be operated intermittently up to +150° F
<b>Output Drift:</b>	Less than 2% signal loss per month
<b>Repeatability:</b>	1% (H <sub>2</sub> S, CO) 2% (SO <sub>2</sub> , NH <sub>3</sub> , CL <sub>2</sub> , NO <sub>2</sub> )
<b>Relative Humidity:</b>	15% to 90% continuous All sensors may be operated intermittently between 0 and 99% relative humidity
<b>Operating Life:</b>	2 years Storage time in non-operating condition should not exceed 6 months. Easy plug-in replacement of fuel cell may be required after 2 years.
<b>Size:</b>	4 inches wide, 9.5 inches high, 3.25 inches deep Finished dimensions when installed with 850-2 junction box
<b>Weight:</b>	5.75 pounds Includes sensor and junction box.
<b>Mounting provision:</b>	¾ inch male NPT thread Mates with SST 850-2 junction box.
<b>Approval Code:</b>	Canadian Standards Association C22.2 class 4828-02,

## ORDERING INFORMATION

Part No.	Description
810-1-(**)	Model GT810 H <sub>2</sub> S (Hydrogen Sulfide) Gas Sensor
810-2-(**)	Model GT810 SO <sub>2</sub> (Sulphur Dioxide) Gas Sensor
810-3-(**)	Model GT810 CO (Carbon Monoxide) Gas Sensor
810-4-(**)	Model GT810 NH <sub>3</sub> (Ammonia) Gas Sensor
810-5 (**)	Model GT810 CL <sub>2</sub> (Chlorine) Gas Sensor
810-7-(**)	Model GT810 NO <sub>2</sub> (Nitrogen Dioxide) Gas Sensor
	** insert -20, -50 or -100 (Sensor range in PPM)
850-2	Junction Box with ¾ inch NPT conduit outlet, copper free aluminum with epoxy finish.



**SAFETY SYSTEMS TECHNOLOGY (NV), INC.**

23282 Mill Creek Drive, Suite 215, Laguna Hills, California 92653 USA  
Tel. 1-949-583-1857 Fax 1-949-340-6643 <http://www.safetysys.com>