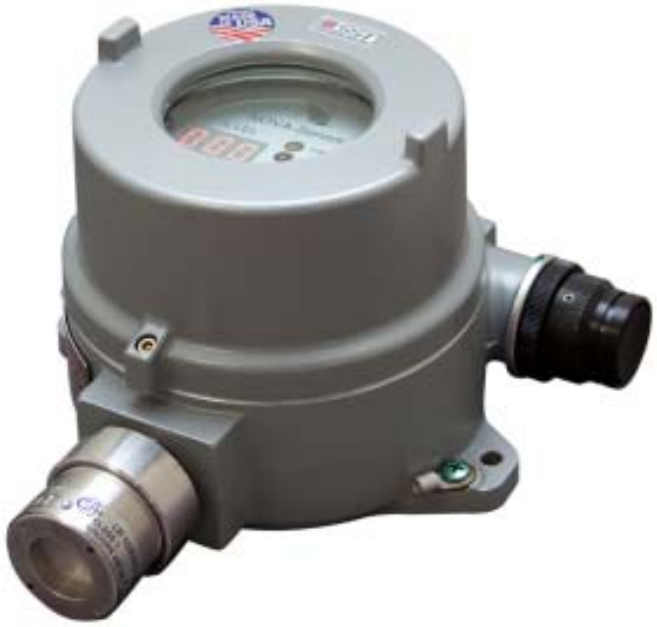
Model GC801 Combustible Gas NOVA-Sensor®



- ***Poison resistant catalytic sensing element in stainless steel CSA approved explosion proof housing***
- ***Epoxy coated Copper-free aluminum electronics enclosure with viewing window***
- ***Pushbutton switch initiates "one-man" calibration sequence***
- ***Digital readout of gas concentration in % LEL***
- ***Alarm and Fault relay outputs for local control***
- ***Analog/digital/discrete outputs***
- ***Addressable via RS485 protocol***
- ***4-20 mA output suitable for connection to external equipment, including SST NOVA-5000 modules, PLC's, SCADA or distributed control systems.***
- ***24 volt DC nominal operating voltage***
- ***CompTest™ check of analog and relay outputs***
- ***Suitable for Class I Division 1 Groups B,C,D locations***

NRTL /C ***Class I Group B,C,D***

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The SST Model GC801 Combustible Gas NOVA-Sensor® is a completely self-contained device that measures and displays the concentration of gas accumuated in a protected area, performs local control functions, and optionally transmits this information to a central control point. The SST sensors use the "catalytic" method of gas detection. Located inside a stainless steel flameproof housing, the sensing element is exposed to the detected gas through a sintered stainless steel flame arrestor. The actual detector consists of a matched pair of elements, each consisting of a fine platinum wire embedded in a bead of aluminum material. Flammable gases in low concentrations will not burn by themselves, but when in contact with a suitable catalyst, it is possible to burn (or oxidize) any concentration of gas. One of the element pairs in the SST sensor is treated with such a catalyst, while the other element is protected with a similar, non-catalytic material. The platinum wires within the elements are heated by passing a suitable current through them. When the gas is oxidized on the surface of the catalyst, additional heat is released, which causes a temperature rise on the catalytic surface. This change in temperature is measured and converted to determine the amount of gas present.

The SST Combustible Gas NOVA-Senser has been designed witha special "poison-resistant" sensing material, and provides accurate measurements in atmospheres where traces of silicone or other poisoning agents may be present. Readings are unaffected by humidity or carbon dioxide. The concentration of combustible gas is measured in terms of the Lower Explosive Limit (LEL).

Each SST NOVA-Sensor includes a high reliability microprocessor based transmitter/controller in the associated explosion proof housing. A digital readout continuously displays operating status and the actual concentration of gas present in the percentage of the Lower Explosive Limit (%LEL). The transmitter converts this reading to a standard 4-20 mA signal. This signal may be connected to any remote device with a standard 4-20 mA input. Connections between the transmitter and control device are normally made with 3 conductor cable [24 VDC (+), 24 VDC (-), signal]. Relays are provided for Alarm A1, Alarm A2, and Fault. The A1 and A2 relays operated at user adjustable trip points; the fault relay operates upon loss of power or internal failure of the unit. Relays are suitable for controlling local HVAC or equipment shutdown.

Additionally an RS-485 digital interface is available, enabling multiple GC801's to be addressable and connected to a common pair of wires for communication to a central acquisition system.

The "One-Man" automatic calibration sequence is initiated by depressing the pushbutton switch located on the side of the enclosure. The sensor is then exposed to the fresh air, followed by calibrating gas. The

microprocessor stores the results of these tests in its permanent (non-volatile) memory for use in subsequent LEL measurements.

There are no screwdriver or other manual adjustments required, and the calibration can be performed even in the presence of combustible gases. During the calibration process, the 4-20 mA and relay outputs from the sensor are normally suppressed. The sensor automatically returns to normal operation when the calibration is complete. During installation, the technician may optionally activate the built-in comprehensive I/O test (CompTest™). During CompTest, the NOVA-Sensor's analog and relay outputs are not suppressed, thus providing a complete operational check of the overall system.

The Model GC801 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

Combustible gas sensing capability shall be provided by poison-resistant catalytic gas sensors, contained in explosion proof housings. The sensor shall include a microprocessor based control electronics which converts the measured gas concentration in percent LEL to the industry standard 4-20 mA signal, plus alarm and fault relay outputs. A continuously reading digital display shall be provided on the sensor, capable of displaying sensor status in the current LEL reading. A switch for initiating sensor calibration shall be provided. Calibration shall not require any operator adjustment. All calibration data shall be stored in non-volatile memory in the sensor. Relay and analog outputs shall normally be inhibited during calibration; however, it shall be possible for the calibrating technician to selectively enable outputs when desired. The sensor shall be suitable for offshore use, and the manufacturers data shall so state. Safety Systems Technology Model GC801 Combustible Gas NOVA-Sensor®, or approved equivalent, shall be supplied.

TECHNICAL SPECIFICATIONS

Power Input:	24 volts DC nominal, 180 mA standby, 125 mA in alarm Will operate within specifications at any supply voltage between 16 and 32 volts.
Sensor Current:	300 mA Typical average sensor current, supplied by integral sensor electronics.
Sensor Voltage:	2.0 + 0.1 volts Maximum sensor power consumption 0.75 watts.
Operating Temperature:	-40 to +176° F, -40 to +80° C
Sensitivity:	0.16 mA per % LEL Automatically adjusted during calibration and during CompTest
Accuracy:	Linear response between 0 and 100% LEL Zero drift less than 5% per year.
Relay Outputs:	Low Alarm (latching or non-latching) High Alarm (latching) Malfunction (non-latching)
Relay Contact Ratings:	6 amps @ 28 VDC or 300 VAC resistive 1/8 HP @ 120/240 VAC
Analog Output:	0 to 20 mA into a load of 600 ohms or less
Digital Ouput:	Designed per RS-485 to permit bi-directional communication between detectors and data acquisition system over shielded twisted pair.
Size:	4.5 inches diameter X 3.23 inches deep Includes junction box and sensor. Conduit connections are 3/4" NPT thread.
Weight:	5.0 pounds

ORDERING INFORMATION

PART NO.	DESCRIPTION
801-1	Model GC801 Combustible Gas NOVA-Sensor® with 4-20 mA output, alarm and fault relays

OPTIONAL ACCESSORIES

851-1	Rain Shield to protect sensor from rain or snow, stainless steel
852-1	Dust Cover with 40 micron filter to protect sensor from airborne dust
854-1	Duct Mounting Assembly for installing sensor in an air duct

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