Four-Channel Combustible Gas Monitor

**Features**

- Four Independent Channels
- Low power consumption
- High visibility LED status indicators
- Variety of relay options
- Adjustment-free calibration
- Low cable costs

**Benefits**

- Maximum reliability
- Low operating costs
- Provides visual indication of fault and alarm status at the detector location
- Provides choice to meet specific customer requirements
- Lower calibration costs
- Lower installation costs

**Description**

The Model 610A Controller is a four-channel system designed to continuously monitor for potential explosive concentrations of most combustible gases/vapors. The system operates in the range of 0-100% LEL (Lower Explosive Limit) and is calibrated for a particular gas or vapor.

The system consists of four remote sensing assemblies and a solid-state controller. The controller consists of four independent channels, each having its own control circuitry. The sensors are monitored independently (i.e. they are not scanned, nor are the signals summed).

The 610A features a digital display of gas concentrations in % LEL (0-99%) for each channel. Calibration of each channel is done independently with alarm relays disabled while in this mode. Normally, only a periodic calibration check is needed to assure dependable performance.

The 610A has a variety of relay options, such as normally energized or de-energized high and low alarms and latching or non-latching high and low alarms. The malfunction relay circuitry is normally energized. These relays may be discrete for each channel or common to all channels. Also included as an option is independent low and high alarm settings for each channel.

**Applications**

- Compressor Stations
- Drilling and Production Platforms
- Fuel Loading Facilities
- Gas Turbine Enclosures
- LNG Processing and Storage
- Oil Well Logging
- Sewage Plants
- Solvent Vapors
**System Specifications**

**Digital Readout:** 0-99% LEL

**Accuracy:**
- ±3% LEL ± 50% LEL gas
- 5% LEL > 50% LEL gas

**Classification:** General purpose for mounting in non-hazardous areas, indoors.

**Warranty:** Two years

**Approvals:** CSA, FM, CE Mark

---

**Environmental Specifications**

**Temperature Range:** 32°F to 140°F (0°C to 60°C)

**Storage Temperature:** -4°F to 149°F (-20°C to 65°C)

**Humidity:** 10-95%, non-condensing

---

**Mechanical Specifications**

**Mounting:** Panel or wall

**Dimensions:** 4.0” W x 6.9” H x 11.5” D (102mm W x 175mm H x 292mm D)

**Weight:** 6.2 lbs. (2.86 kg)

---

**Electrical Specifications**

**Power:** 105-130 VAC (205-255 VAC optional), 50-60 Hz, 22-30 VDC, 9 watts nominal per channel (117 VAC)

**Output:** Analog 4-20mA (300 ohm load max.) Accuracy ±5%, 1.5-20mA

**Alarm Circuits:** 4A/117 VAC, resistive

**LED Status Indicators:**
- AO - Analog output malfunction
- SE - Sensor malfunction
- HI - High line voltage
- LO - Low voltage

**Standard Configuration:** 610A-1-1-1-01-1-2-4 (110 VAC / 24 VDC, common relays/alarms, latch alarm, non-latch warn, de-energized, standard sensor, FM, Zone Controller Off, 4-Channels Active)

---

**Sensor Elements**

General Monitors’ catalytic bead sensors are designed for reliable performance and long life. Each sensor must undergo extensive burn-in and rigid quality control procedures before shipment.

The sensors consist of two catalytic bead elements in a balanced Wheatstone bridge circuit. These low temperature catalytic bead sensing elements require minimal sensor excitation current, greatly increasing sensor life.

---

**Sensor Specifications**

**Type:** Continuous diffusion, low temperature catalytic bead.
- Standard Industrial Hydrocarbon Sensor.
- High Temperature Standard Industrial Hydrocarbon Sensor.

**Temperature Range:**
- 40°F to +167°F (-40°C to +75°C) High Temperature Sensor to 392°F (200°C)

**Response Time:** T50: typically 6 seconds

**Zero Drift:** Less than 5% per year

**Life:** 3 to 4 years, normal service

**Classification:** Class I, Division 1 and 2, Groups B, C and D

**Cable Length:** Three conductor cable. Maximum length of cable between controller and sensor assembly with loop resistance of 20 ohms. Shielded cable is recommended.

**Wire Size Length**

<table>
<thead>
<tr>
<th>AWG</th>
<th>Meters</th>
<th>Feet</th>
</tr>
</thead>
<tbody>
<tr>
<td>14</td>
<td>2,520</td>
<td>7,600</td>
</tr>
<tr>
<td>16</td>
<td>1,460</td>
<td>4,800</td>
</tr>
<tr>
<td>18</td>
<td>910</td>
<td>3,000</td>
</tr>
<tr>
<td>20</td>
<td>580</td>
<td>1,900</td>
</tr>
</tbody>
</table>

**Warranty:** Two years

**Approvals:** CSA and/or FM

---

**Specifications subject to change without notice.**

**Represented by:**

---

**General Monitors Worldwide**

**Lake Forest, CA**

26776 Simpatica Circle

Lake Forest, California, 92630

Tel: +1-949-581-4464

Fax: +1-949-581-1151

email: info@generalmonitors.com

**Houston, TX**

9776 Whithorn Drive

Houston, Texas, 77095

Tel: +1-281-855-6000

Fax: +1-281-855-3290

email: gmhou@generalmonitors.com

**Ireland**

Ballybrit Business Park

Galway

Republic of Ireland

Tel: +353-91-751175

Fax: +353-91-751317

email: info@gmil.ie

**Singapore**

No. 2 Kallang Pudding Road

#09-16 Mactech Building

Singapore 349307

Tel: +65-4-8143814

Fax: +65-4-8857587

email: gmme@generalmonitors.ae

**United Arab Emirates**

P.O. Box 61209

Jebel Ali

United Arab Emirates

Tel: +971-4-8143814

Fax: +971-4-8857587

email: gmme@generalmonitors.ae

**United Kingdom**

Heather Close

Lyme Green Business Park

Macclesfield, Cheshire

United Kingdom, SK11 0LR

Tel: +44-1625-619583

Fax: +44-1625-619098

email: info@generalmonitors.co.uk

---

Publication #: DS-610A-C0612