Flammable, toxic and oxygen gas detector for industrial applications

Use
3 wire, 4-20mA and RS485 MODBUS output fixed point detector with in-built alarm and fault relays for the protection of personnel and plant from flammable, toxic and Oxygen hazards. Incorporates a transmitter with local display and fully configurable via non-intrusive magnetic switch interface.

Electrical
- Input Voltage Range: 12 to 32VDC (24VDC nominal)
- Max Power Consumption: Maximum power consumption is dependent on the type of gas sensor being used. Electrochemical cells = 3.7W, IR = 3.7W and catalytic = 4.9W. Maximum inrush current = 800mA at 24VDC
- Current Output: Sink or source
- Relays: 3 x 5A@250VAC. Selectable normally open or normally closed (switch) and energized/de-energised (programmable)
- Alarm relays default normally open/de-energized. Fault relay default normally open/energized

Communication
- RS485, MODBUS RTU

Construction
- Material
  - Housing: Epoxy painted aluminium alloy ADC12 or 316 stainless steel
  - Sensor: 316 stainless steel
- Weight (approx)
  - Aluminium Alloy LM25: 4.4lbs
  - 316 Stainless Steel: 11lbs
- Mounting
  - Integral mounting plate with 4 x mounting holes suitable for M8 bolts. Optional pipe mounting kit for horizontal or vertical pipe Ø1.5 to 3" (2" nominal)
- Cable Entries
  - UL/cUL versions: 2 x ¾"NPT conduit entries. Suitable blanking plug supplied for use if only 1 entry used. Seal to maintain IP rating; ATEX/IECEx versions: 2 x M20 cable entries

Environmental
- IP Rating
  - IP66 in accordance with EN60529:1992
- Certified Temperature Range
  - -40ºF to +149ºF (-40ºC to +65ºC)

Detectable Gases and XCD Sensor Performance

<table>
<thead>
<tr>
<th>Gas</th>
<th>User Selectable Full Scale Range</th>
<th>Default Range</th>
<th>Steps</th>
<th>User Selectable Cal Gas Range</th>
<th>Default Cal Point</th>
<th>Response Time (T90) Secs</th>
<th>Accuracy</th>
<th>Operating Temperature Min</th>
<th>Operating Temperature Max</th>
<th>Default Alarm Points A1</th>
<th>A2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Electrochemical Sensors</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oxygen</td>
<td>25.0%Vol. only</td>
<td>25.0%Vol.</td>
<td>n/a</td>
<td>20.9%Vol. (Fixed)</td>
<td>20.9%Vol.</td>
<td>&lt;0.5%Vol.</td>
<td>1%Vol.</td>
<td>20°C / -4°F</td>
<td>55°C / 131°F</td>
<td>19.5%Vol.</td>
<td>23.5%Vol.</td>
</tr>
<tr>
<td>Hydrogen Sulfide*</td>
<td>10.0% to 100.0ppm</td>
<td>50.0ppm</td>
<td>0.1ppm</td>
<td>25ppm</td>
<td>25ppm</td>
<td>&lt;1ppm</td>
<td>1ppm</td>
<td>20°C / -4°F</td>
<td>55°C / 131°F</td>
<td>11ppm</td>
<td>20ppm</td>
</tr>
<tr>
<td>Carbon Monoxide**</td>
<td>100.0% to 1000.0ppm</td>
<td>300ppm</td>
<td>1ppm</td>
<td>100ppm</td>
<td>100ppm</td>
<td>&lt;5ppm</td>
<td>3ppm</td>
<td>20°C / -4°F</td>
<td>55°C / 131°F</td>
<td>32ppm</td>
<td>100ppm</td>
</tr>
<tr>
<td>Hydrogen</td>
<td>1.000%ppm</td>
<td>1.000ppm</td>
<td>n/a</td>
<td>500ppm</td>
<td>500ppm</td>
<td>&lt;10ppm</td>
<td>3ppm</td>
<td>20°C / -4°F</td>
<td>55°C / 131°F</td>
<td>20ppm</td>
<td>40ppm</td>
</tr>
<tr>
<td>Nitrogen Dioxide***</td>
<td>10.0% to 50.0ppm</td>
<td>10.0ppm</td>
<td>5ppm</td>
<td>5ppm</td>
<td>5ppm</td>
<td>&lt;1.5ppm</td>
<td>1.5ppm</td>
<td>20°C / -4°F</td>
<td>55°C / 131°F</td>
<td>5ppm</td>
<td>10ppm</td>
</tr>
</tbody>
</table>

* Lowest Alarm Limit = 1ppm; Lowest Detection Limit = .5ppm
** Lowest Alarm Limit = 15 ppm; Lowest Detection Limit = 10ppm
*** Lowest Alarm Limit = 0.6 ppm; Lowest Detection Limit = 0.3ppm

**Catalytic Bead Sensors**
- Flammable 1 to 8
  - 20.0 to 100.0%LEL
  - 100%LEL
  - 10%LEL

**Infrared Sensors**
- Methane
  - 20.0 to 100.0%LEL
  - 100%LEL
  - 10%LEL
- Propane
  - 20 to 100%LEL
  - 100%LEL
  - 10%LEL
- Carbon Dioxide
  - 2%Vol. only
  - 2%Vol.
  - n/a

**Certification**
- US, Latin America, Canada
  - UL/c-UL - Class I, Division 1, Groups B, C and D, Class I, Division 2, Groups B, C & D, Class II, Division 1, Groups E, F & G, Class II, Division 2, Groups F & G. -40°C to +65°C
- ATEX Ex II 2 GD Ex d IIC Gb T6 (Ta -40°C to +65°C) Ex tb IEC 785°C Db IP66
- IEC Ex d IIC Gb T6 (Ta -40°C to +65°C) Ex tb IEC 785°C Db IP66

**Performance**
- UL508, CSA 22.2 No. 152 (flammable gases, excludes infrared sensors); ATEX, IEC/EN60079-29-1:2007, EN45544, EN50104, EN50271; China: PA Pattern Measurement (for transmitter and toxic gas sensors) "CCCF" Shenyang for Flammable (fire dept approval)