



## IR80 Carbon Dioxide Gas Monitor

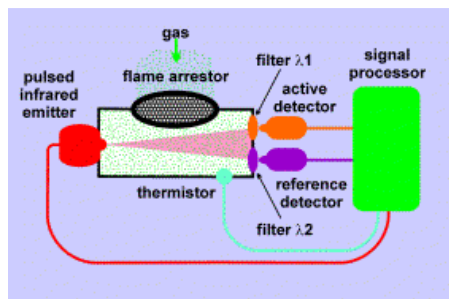
The Monicon IR80 is a high quality, self contained, NDIR (Non Dispersive Infra Red) gas sensor that offers a host of sophisticated features to provide fast, reliable warnings against exposure to dangerous concentrations of carbon dioxide.

### Features



- Voltage free relay contacts
- Advanced digital readout
- User programmable
- Low power consumption
- Built in battery backup circuit
- Alarm inhibit during calibration
- 4-20mA analogue output
- Extensive fault detection firmware
- Sealed to IP65 rating

The IR80 will operate as a standalone instrument or in conjunction with a controller or a computer. It is housed in an attractive, metallic compact enclosure and may be configured or calibrated by one person. The gas concentration is indicated on a rugged 8-character alphanumeric display which also indicates instrument status. The IR80 is fully user programmable and no physical adjustments are necessary during calibration as the on-board computer assists the calibration procedure. All user variables are stored in non-volatile memory (EEPROM) and retained indefinitely even during total power failure.



The IR80 uses advanced miniaturised NDIR technology combined with surface-mount microprocessor and firmware technology. A pulsed infrared source emits a broad spectrum infrared beam within an optical cavity. The system measures the absorption of infrared energy as it passes through a gas sample. Different gases have clearly defined absorption characteristics, their concentration can be determined by their absorption of infrared radiation at the wavelength determined by filter  $\lambda_1$  in the diagram.

To compensate for interfering factors filter  $\lambda_2$  isolates another wavelength which is used to measure the total transmission through the optical cavity and is not affected by the gas being monitored. By comparing the infrared energy reaching each of the two detectors, the concentration of the gas sample can be determined. The signal processor compares and linearises these two signals. A thermistor monitors the sensor temperature and the signal processor factors in variations caused by temperature changes.

### **IR80 Specifications**

<b>Supply voltage</b>	<i>Nominal 24Vdc (operates from 20Vdc to 30Vdc)</i>
<b>Power consumption</b>	<i>2W nominal, 2.3W maximum</i>
<b>Analogue output</b>	<i>4-20mA current source referenced to 0V</i>
<b>Analogue output load</b>	<i>100 Ohms typical, 500 Ohms maximum</i>
<b>Preconditioning Requirements</b>	<i>Operational: 30 seconds, Specification: 60 minutes</i>
<b>Storage temperature</b>	<i>-40°C to +66°C</i>
<b>Operating temperature</b>	<i>-20°C to +50°C</i>
<b>Response time (T90)</b>	<i>Typically &lt;45 seconds</i>
<b>Operating RH range</b>	<i>10%RH to 90%RH (Non-condensing)</i>
<b>Drift, S.T.P. continuous duty in air</b>	<i>&lt;&lt;3% over three months</i>
<b>Linearity</b>	<i>±5%</i>
<b>Repeatability</b>	<i>±2%</i>
<b>Resolution</b>	<i>1%</i>
<b>Enclosure</b>	<i>Epoxy coated aluminium. 160mm x 100mm x 60mm</i>
<b>Weight</b>	<i>1.0Kg</i>
<b>Electromagnetic Conformance</b>	<i>Complies with EN50081 and EN50082</i>
<b>Mounting holes</b>	<i>Dia. 4.5mm, spaced H: 205mm, V: 113mm</i>
<b>Cable entry</b>	<i>20mm cable gland for 5-10mm OD cable</i>
<b>Cable type</b>	<i>3-core screened cable, 0.5mm<sup>2</sup> - 1.5mm<sup>2</sup></i>

## **Total Protection (UK) Limited**

142 Leyland Trading Estate Irthlingborough Road  
Wellingborough Northamptonshire NN8 1RT

**Tel: 0844 567 7423**

**[info@totalprotectionuk.com](mailto:info@totalprotectionuk.com)**

**[www.totalprotectionuk.com](http://www.totalprotectionuk.com)**