

# MinIR™

## Low Power Carbon Dioxide Sensor

**MinIR** is an ultra low power ( $3.5\text{mW}^4$ ), high performance  $\text{CO}_2$  sensor, ideally suited for battery operation and portable instruments. Based on patented IR LED and Detector technology and innovative optical designs, **MinIR** is a third generation product from Gas Sensing Solutions Ltd – leaders in IR LED  $\text{CO}_2$  sensing.

- Ultra-low Power 3.5mW
- Measurement ranges from 0 to 100%
- 3.3V supply.
- Peak current only 33mA.
- Compact 20mm diameter package



**MinIR™ Sensor**

## Specifications

General Performance	
<b>Warm-up Time</b>	< 10s. 1.2 secs to first reading.
<b>Operating Conditions</b>	0°C to 50°C (Standard) 0 to 95% RH, non-condensing
<b>Recommended Storage</b>	-30°C to +70°C
CO2 Measurement	
<b>Sensing Method</b>	Non-dispersive infrared (NDIR) absorption Patented Gold-plated optics Patented Solid-state source and detector
<b>Sample Method</b>	Diffusion
<b>Measurement Range</b>	0-5%, 0-20%, 0-60%, 0-100%
<b>Accuracy</b>	$\pm 70$ ppm $\pm 5\%$ of reading <sup>1</sup>
<b>Non Linearity</b>	< 1% of FS
<b>Pressure Dependence</b>	0.1% of reading per mbar in normal atmospheric conditions.
<b>Operating Pressure Range</b>	950 mbar to 1050 mbar <sup>2</sup>
<b>Response Time</b>	10 secs to 3 mins (Configurable via filter type and application) <sup>3</sup> Reading refreshed twice per second. <sup>3</sup>

Electrical/ Mechanical		
<b>Power Input</b>	3.25 to 5.5V. (3.3V recommended). Peak Current 33mA <sup>4</sup> . Average Current <1.5mA <sup>4</sup> .	
<b>Power Consumption</b>	3.5mW <sup>4</sup>	
<b>Dimensions and Wiring Connections</b>		
All measurements in millimeters (mm)		
<b>Connection</b>	<b>Description</b>	<b>Comments</b>
0V	GND Connection	0V
V+	Postive power supply	3V3 to 5V
TX-Out	UART Tx from sensor	Voh will be 3V. Sensor output.
Rx-In	UART Rx to sensor	Used for configuration etc.

**Note 1:** All measurements are at STP unless otherwise stated.

**Note 2:** External Pressure calibration required.

**Note 3:** User Configurable Filter Response.

**Note 4:** Power measurements for standard CO2 sensor with 2 readings per second.

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