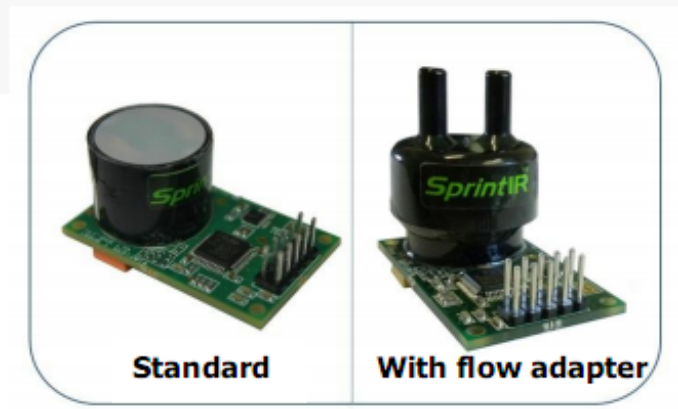
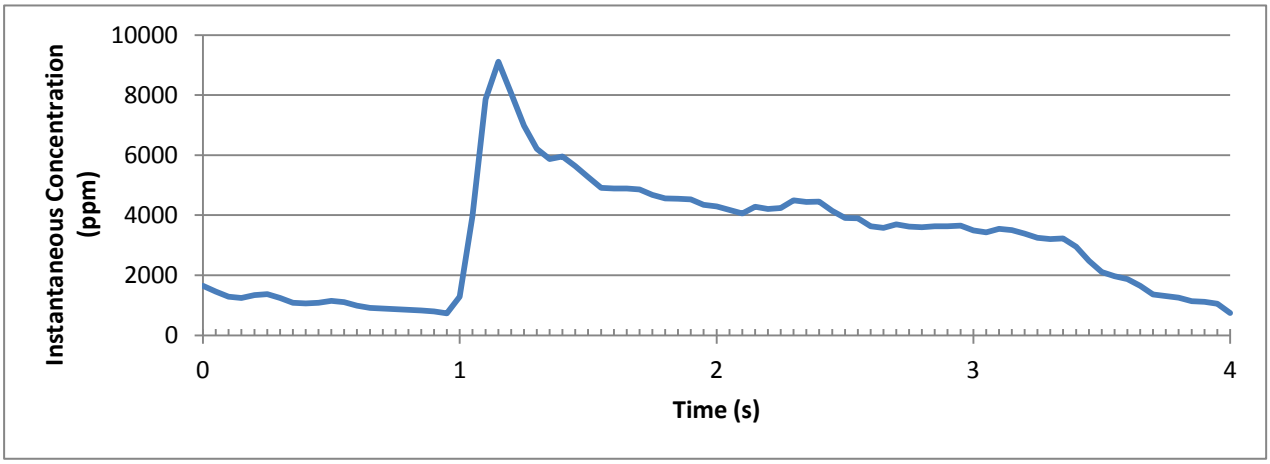
# SprintIR™

## High Speed Carbon Dioxide Sensor

SprintIR is a high speed (20 Hz) $CO_2$ sensor, ideally suited for applications which require capture of rapidly changing CO2 concentrations including metabolic assessment and analytical instrumentation.

- High speed sensing (20Hz)
- Measurement ranges from 0 to 100%
- 3.3V supply
- Low power requirement 35mW
- Flow through adaptor (Optional)




## Specifications

| CO2 Measurement | |
|---|---|
| **Sensing Method** | Non-dispersive infrared (NDIR) absorption<br>Patented Gold-plated optics<br>Patented Solid-state source and detector |
| **Sample Method** | Diffusion(Standard) / Flow through (with flow-through adapter) |
| **Measurement Range** | 0-5%, 0-20%, 0-60%, 0-100% |
| **Accuracy** | ±70 ppm +/- 5% of reading[1] |
| **Measurement Noise** | <10% of reading with no digital filtering |
| **Non Linearity** | < 1% of FS |
| **Pressure Dependence** | 0.1% of reading per mbar in normal atmospheric conditions |
| **Operating Pressure Range** | 950 mbar to 10 bar[2] |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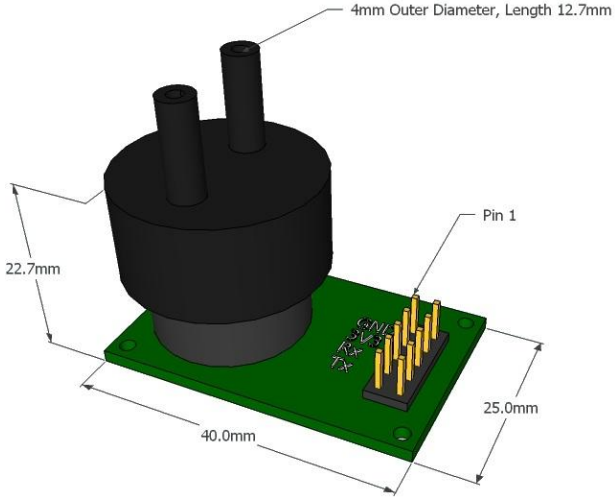
| General Performance | |
|---|---|
| **Warm-up Time** | < 1 minute |
| **Operating Conditions** | 0°C to 50°C (Standard)<br>-25°C to 55°C (Extended range)<br>0 to 95% RH, non-condensing |
| **Recommended Storage** | -30°C to +70°C |

| Electrical/ Mechanical | |
|---|---|
| Power Input | • 3.2 to 5V. (3.3V recommended)<br>• Peak current 100mA<br>• Average Current <15mA |
| Power Consumption | 35 mW |
| Output | UART only |

Dimensions and Wiring Connections

2x5 0.1" header. Pin 1 is identified on the dimensional drawing.




| Function | Pin # | Pin # | Function |
|---|---|---|---|
| 0V | 1 | 2 | N/C |
| +3.3V | 3 | 4 | 0V |
| Sensor Rx (in) | 5 | 6 | 0V |
| Sensor Tx (out) | 7 | 8 | Zero N |
| N/C | 9 | 10 | Zero Air |

Pin 2 should not be connected. Pins 4 and 6 do not require connection and are internally connected to GND.

The zeroing options are for hardware zeroing (both active low). These functions can also be implemented by sending a serial command (recommended).

Typical connections for digital interface are GND, 3.3V, Rx and Tx. Note that the Vh for the serial Tx line will be 3V regardless of the supply voltage.

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

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

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





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