

SprintIR™ Datasheet

High Speed Carbon Dioxide Sensor

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

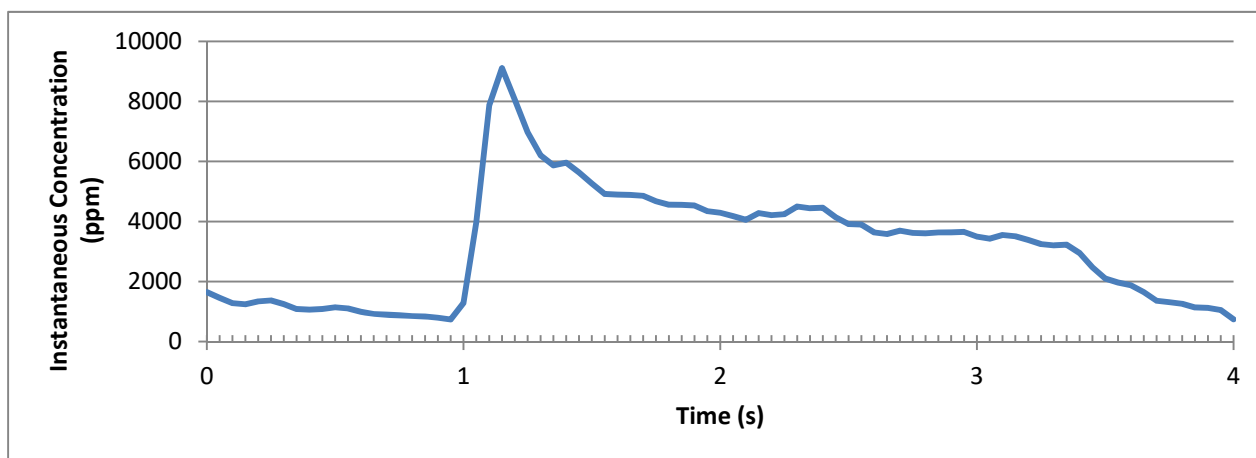


- High speed sensing (20Hz)
- Measurement ranges from 0 to 100%
- 3.3V supply
- Low power requirement 35mW
- Flow through adaptor (Optional)

Part Numbers

GC-0017 20% CO₂
GC-0018 100% CO₂

CM-0013 Tube Adapter
(Optional)



Specifications

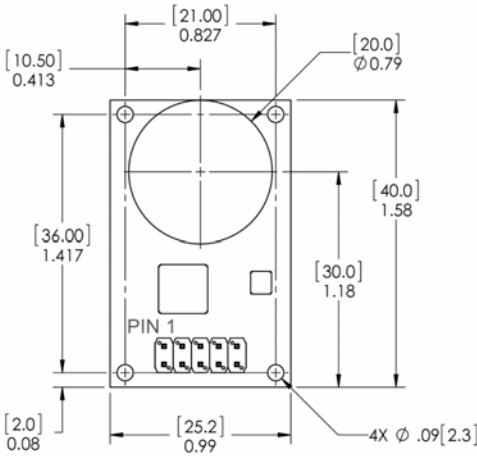
| CO2 Measurement | |
|---|--|
| Sensing Method | Non-dispersive infrared (NDIR) absorption Patented Gold-plated optics Patented Solid-state source and detector |
| Sample Method | Diffusion(Standard) / Flow through (with flow-through adapter) |
| Measurement Range | 0-5%, 0-20%, 0-60%, 0-100% |
| Accuracy | ±70 ppm +/- 5% of reading ¹ (100% Range ±300 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 Range² | 950 mbar to 10 bar ³ |

| General Performance | |
|-----------------------------|---|
| Warm-up Time | < 1 minute |
| Operating Conditions | 0°C to 50°C (Standard) -25°C to 55°C (Extended range) 0 to 95% RH, non-condensing |
| Recommended Storage | -30°C to +70°C |

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

Note 2: Excludes Flow-through adapter. Contact GSS for more information

Note 3: External Pressure calibration required.

| Electrical/ Mechanical | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|----------|----------|-------|----------|----|---|---|-----|-------|---|---|----|----------------|---|---|----|-----------------|---|---|--------|-----|---|----|----------|
| Power Input | <ul style="list-style-type: none"> • 3.2 to 5V. (3.3V recommended) • Peak current 100mA • Average Current <15mA | | | | | | | | | | | | | | | | | | | | | | | | |
| Power Consumption | 35 mW | | | | | | | | | | | | | | | | | | | | | | | | |
| Output | UART only | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>Dimensions and Wiring Connections 2x5 0.1" header. Pin 1 is identified on the dimensional drawing.</p>  <p>The drawing shows a rectangular module with a 2x5 pin header at the bottom. Dimensions are provided in millimeters [] and inches (). Key dimensions include: a total width of 21.00 mm (0.827 in), a distance of 10.50 mm (0.413 in) from the left edge to the center of the header, a total height of 36.00 mm (1.417 in), a distance of 20.0 mm (0.79 in) from the top edge to the center of the header, a distance of 40.0 mm (1.58 in) from the top edge to the center of the sensor area, a distance of 30.0 mm (1.18 in) from the top edge to the top of the header, a distance of 25.2 mm (0.99 in) from the left edge to the right edge of the header, and a distance of 2.0 mm (0.08 in) from the bottom edge to the top of the header. A circular sensor area is shown with a diameter of 20.0 mm (0.79 in). The header pins are labeled PIN 1 through PIN 10. There are four mounting holes with a diameter of 0.09 inches (2.3 mm).</p> <table border="1"> <thead> <tr> <th>Function</th> <th>Pin #</th> <th>Pin #</th> <th>Function</th> </tr> </thead> <tbody> <tr> <td>0V</td> <td>1</td> <td>2</td> <td>N/C</td> </tr> <tr> <td>+3.3V</td> <td>3</td> <td>4</td> <td>0V</td> </tr> <tr> <td>Sensor Rx (in)</td> <td>5</td> <td>6</td> <td>0V</td> </tr> <tr> <td>Sensor Tx (out)</td> <td>7</td> <td>8</td> <td>Zero N</td> </tr> <tr> <td>N/C</td> <td>9</td> <td>10</td> <td>Zero Air</td> </tr> </tbody> </table> | | 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 |
| 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 | | | | | | | | | | | | | | | | | | | | | | |
| <p>Pin 2 should not be connected. Pins 4 and 6 do not require connection and are internally connected to GND.</p> <p>The zeroing options are for hardware zeroing (both active low). These functions can also be implemented by sending a serial command (recommended).</p> <p>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.</p> | | | | | | | | | | | | | | | | | | | | | | | | | |

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