

# MISIR™

## Low Power HVAC Carbon Dioxide Sensor

MISIR is a low power (20mW), high performance CO<sub>2</sub> sensor. Based on GSS patented solid state IR sensor technology and innovative optical designs, MISIR is configured to meet the requirements of the HVAC and Demand Led Ventilation markets.



- Low Power 20mW
- 0-5,000 ppm Measurement range
- Low noise measurement (<10ppm)
- 3.3V to 5V supply.
- Digital (UART) and Voltage Output Options
- Automatic calibration

### Specification

| General Performance  |   |
|----------------------|---|
| Warm up time         | < 20 seconds  |
| Operating Conditions | 0°C to 50°C<br>0 to 95% RH, non-condensing  |
| Recommended Storage  | -30°C to +70°C  |
| CO2 Measurement      |   |
| Sensing Method       | Non-dispersive infrared (NDIR) absorption<br>Patented Gold-plated optics, GSS Solid-state source and detector |
| Sampling Method      | Diffusion   |
| Measurement range    | 0-5000ppm   |
| Accuracy             | ±50 ppm +/- 3% of reading <sup>1</sup>  |
| Non Linearity        | < 1% of FS  |
| Calibration          | Automatic Baseline (ABC) Calibration  |
| Pressure Dependence  | 0.13% of reading per mm Hg in normal atmospheric conditions   |

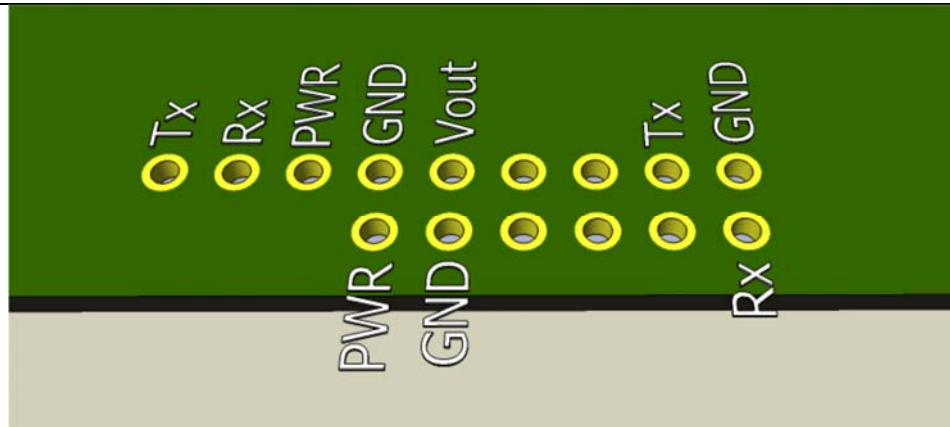
|                                 |                                   |
|---------------------------------|-----------------------------------|
| <b>Operating Pressure Range</b> | 950 mbar to 1100 bar <sup>2</sup> |
| <b>Response Time</b>            | 2 Minutes                         |

| <b>Electrical/Mechanical</b> |   |
|------------------------------|---|
| <b>Power Input</b>           | 3.25 to 5.25V. (3.3V recommended).<br>Peak Current 150mA <sup>3</sup> .<br>Average Current 6mA <sup>3</sup> . |
| <b>Power Consumption</b>     | 20 mW <sup>3</sup>  |

**Dimensions and Wiring Connections**



The total height is 15mm at the highest point.



| Pin  | Description                 | Comment  |
|------|-----------------------------|--|
| PWR  | Vsupply                     | 3.3V to 5.25V  |
| GND  | 0V                          | Only one GND should be connected                               |
| Rx   | Sensor receive line (UART)  | 5V Tolerant  |
| Tx   | Sensor transmit line (UART) | Vout = Vsupply   |
| Vout | Voltage output              | Vout proportional to CO2 concentration<br>Full scale = Vsupply |

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

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

**Note 3:** Power measurements for standard CO2 sensor with 2 readings per second.

**Note 4:** Autocalibration is enabled by default on MISIR. For correct operation, the sensor must experience fresh air at some point during the autocalibration period. For details see the application note "COZIR Autocalibration". For other options, refer to users guide.