

## Commercial CO<sub>2</sub> Sensor CRIR M1



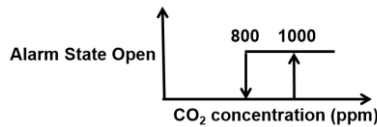
### Commercial Carbon Dioxide Sensor 400-2000 ppm

#### Performance Characteristics

<b>Part Number</b>	C06-0801-000
<b>Target Gas</b>	CO <sub>2</sub>
<b>Operating Principle</b>	Non-dispersive infrared (NDIR)
<b>Standard Range</b>	400 to 2000 ppm
	Up to 10000ppm extended range
<b>Measurement Interval</b>	4 seconds
<b>Accuracy</b>	±40ppm ±3% of reading
<b>Typical Response Time (T<sub>90</sub>)</b>	≤ 120 seconds
<b>Sensor Warm-up Time</b>	3 mins (typically)
<b>Repeatability</b>	> 97%

#### Operation Conditions

<b>Temperature Range</b>	0°C to 50°C
<b>Operating Humidity</b>	0 to 90% RH non-condensed
<b>Storage Temperature</b>	-40°C to 70°C
<b>Expected Operating Life</b>	10 years
<b>Operation Voltage</b>	4.5 to 5.5 V unprotected against surges and reverse connection
<b>Power Consumption</b>	300 mA peak, 30 mA average
<b>Alarm Output, Open Collector</b>	1000/800 ppm Normal state is conducting max 100mA. Transistor open at CO <sub>2</sub> high or at sensor failure

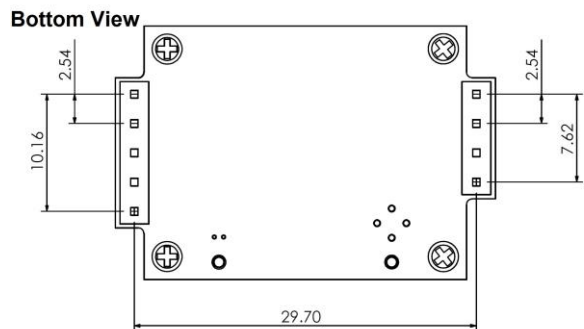
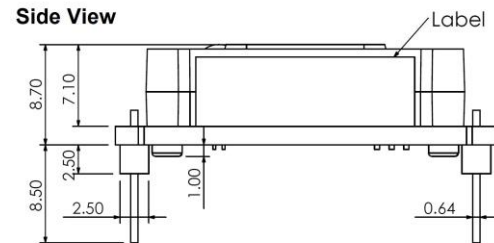
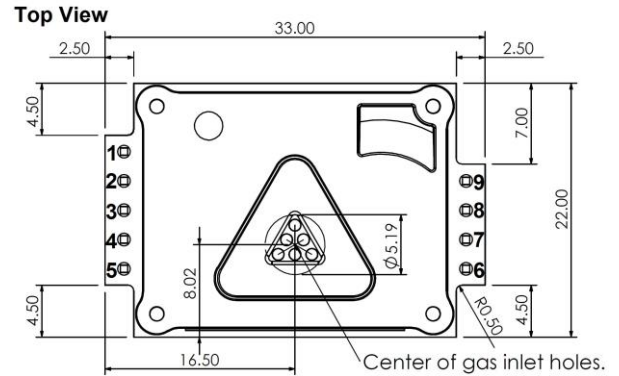


<b>Serial Communication</b>	UART, Modbus protocol
<b>PWM Output, 1KHZ</b>	20% to 100% duty cycle for 400 to 2000 ppm, 3.3 V push-pull CMOS output, unprotect
<b>Maintenance</b>	Maintenance-free for normal indoor application

#### Physical Characteristics

<b>Weight</b>	< 8 g
<b>Size</b>	33.5*22.5*11.7mm (max)

#### Outline Dimensions



All dimensions are in millimeters. All tolerances are ± 0.5 mm

#### Pin Definition

1	bCAL_in /CAL_in
2	UART_R/T
3	UART_TXD
4	UART_RXD
5	DAC
6	Vin_(4.5~5.5V)
7	GND
8	Alarm Output
9	PWM Output

**Note 1:** The CO<sub>2</sub> sensor is designed to measure CO<sub>2</sub> in the range of 400-2000 ppm with the accuracy specified in the datasheet. Nevertheless, exposure to concentrations below 400 ppm may result in incorrect operation of ABC algorithm and shall be avoided when the ABC is ON.

**Note 2:** The CO<sub>2</sub> sensor provides readings via UART in the extended range but the accuracy is degraded.

**Note 3:** In normal IAQ applications, the sensor accuracy is defined after minimum three ABC periods of continuous operation. The CO<sub>2</sub> sensor normally does not require maintenance in IAQ applications. However, for some industrial applications, maintenance may be required.

**Note 4:** The sensor accuracy is specified over the operating temperature range and referenced to certified calibration mixtures. Uncertainty of calibration gas mixtures (±1% currently) is to be added to the specified accuracy for absolute measurements.

**Note 5:** See the sensor manual for Modbus address and parameter definition.