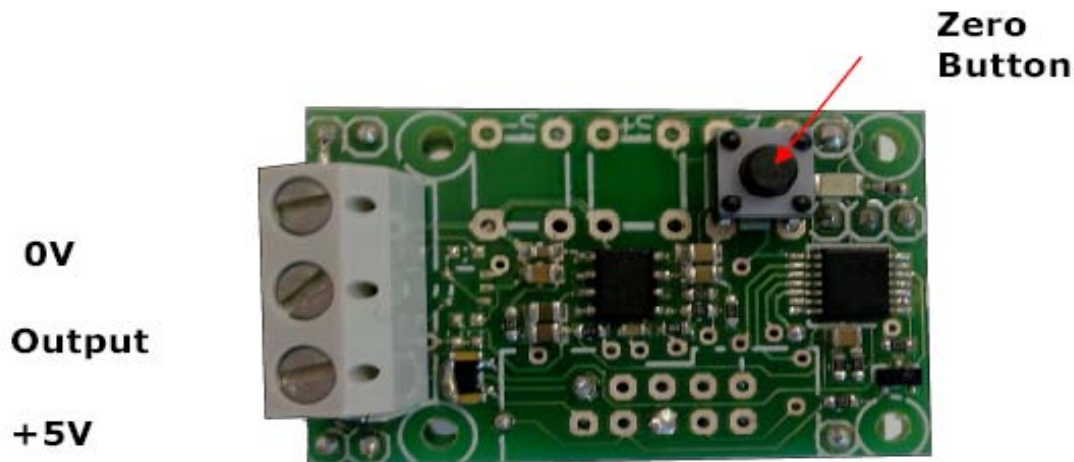


C20 MINIATURE CO2 SENSOR

ANALOGUE OUTPUT OPTION - 0 - 5 V



DESCRIPTION

The C20 Analogue module converts the digital output of the C20 sensor to a voltage output. The voltage is proportional to the CO₂ concentration.

CONNECTIONS

The analogue version of the sensor has a three wire connection:

Pin 1	+ 5v Supply. (4.7 to 5.5V, 240mA peak current)
Pin 2	Analogue output
Pin 3	0V

ANALOGUE OUTPUT

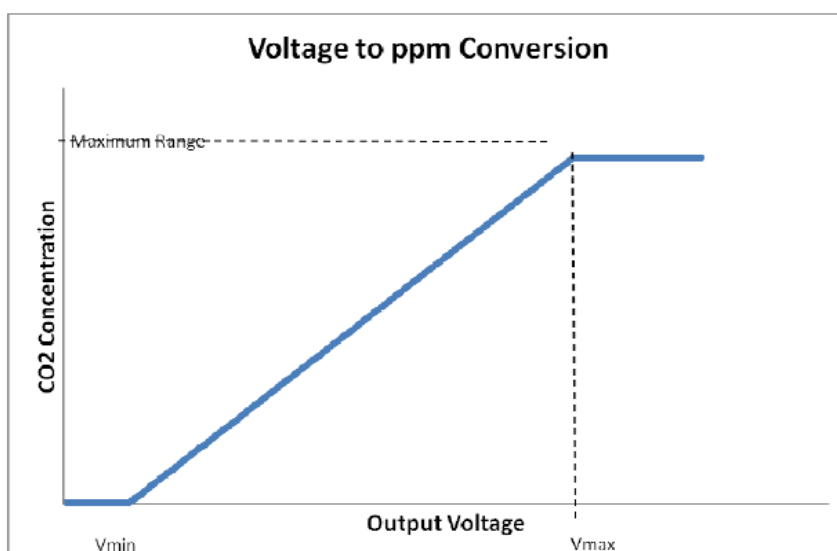
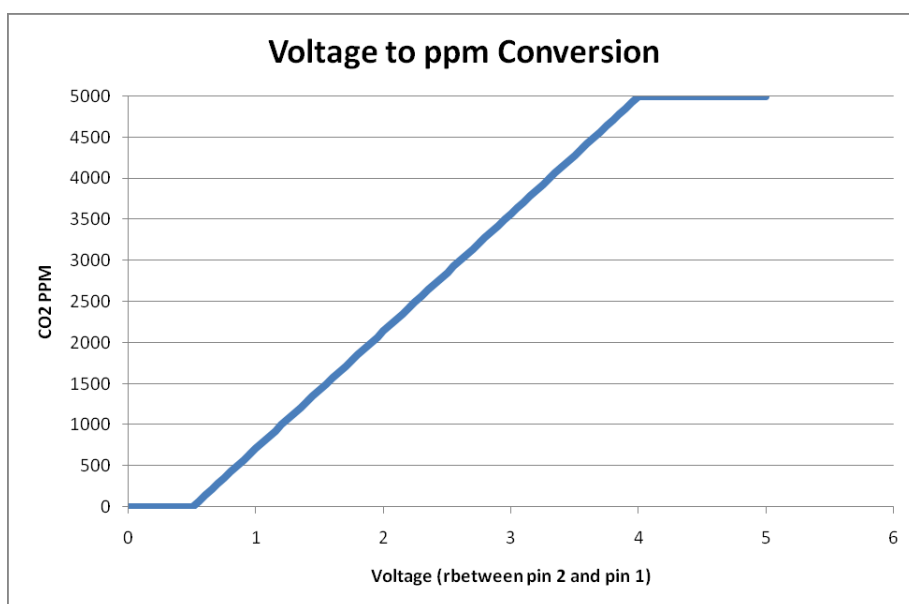
The voltage output from pin two is proportional to the CO₂ measurement. The standard output is from 0.5 to 4V, with the full scale being 5000ppm. Other ranges can be supplied if required. The input impedance of equipment connected to the analogue output should be a minimum of 10kΩ.

There are a range of output options. The standard options are shown below, but other options can be supplied on request.

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The output voltage will vary linearly with CO₂ concentration between Vmin and Vmax (see graph).

	Vmin	Vmax
4 Volt version	0.5V	4V
2 Volt version	0.25V	2V
1 Volt version	0.125V	1V
60mV Version	6mV	60mV



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To convert a voltage to a carbon dioxide concentration:

$$CO_2 = \text{Output Voltage} * (\text{Full Scale Reading}) / (V_{max} - V_{min})$$

For example, if the output voltage is 2.5V, and the full scale reading (ie the range) is 5000ppm, and the Vmax and Vmin are 4.0V and 0.5V respectively, then the measured concentration is:

$$CO_2 = 2.5 * (5000 / (4 - 0.5)) = 3571 \text{ ppm}$$

RANGE

The concentration range must be specified at the time of ordering and is not field-configurable. Standard ranges are:

0-5000ppm
0-5%
0-10%
0-20%
0-65%
0-100%

ZEROING

The sensor can be zeroed by pressing the switch mounted on the analogue module. The switch should be pressed for at least 1s. This assumes that the sensor is in a CO2-free environment (eg Nitrogen).

SPECIFICATION

For the sensor performance, please refer to the C20 User Instructions.

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