

# CDM7160 - Pre-calibrated CO2 Module

## Features:

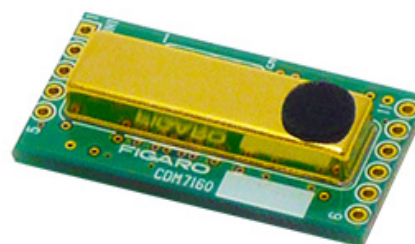
- \* Small size
- \* Low power
- \* High accuracy
- \* Absolute measurement via dual sensors

## Applications:

- \* Indoor air quality control
- \* Fresh air ventilators
- \* Air conditioners
- \* Automatic fans and window openers

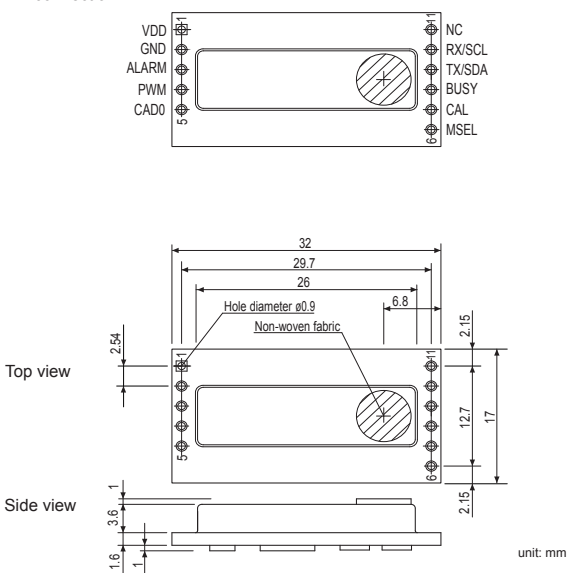
The **CDM7160** CO2 module uses a compact NDIR CO2 sensor, featuring excellent performance characteristics, including high accuracy and low power consumption. Two detector elements inside the module make absolute measurement possible.

Every module is individually calibrated and is provided with both a UART and I2C digital interface. The CDM7160 module is designed for simple integration into a user's products. It can be used in a wide range of applications such as ventilation controls for the improvement of energy savings and to assure a good indoor climate.



## Dimensions

Pin connection



## Pin Connections

Pin No	Name	Description
1	VDD	Input voltage
2	GND	Common ground
3	ALARM	Alarm output
4	PWM	PWM output
5	CAD0	I2C slave address selection input (pull up)
6	MSEL	Communication mode signal input I2C/UART (pull up)
7	CAL	Background/zero calibration input (pull up) *TBD
8	BUSY	BUSY signal output
9	Tx/SDA	UART Tx output/ I2C SDA input/output
10	Rx/SCL	UART Rx input/ I2C SCL input
11	NC	not connected

**Specifications (tentative)**

Product name	Carbon dioxide (CO <sub>2</sub> ) sensor module
Model No.	CDM7160
Detection range	300~5,000ppm CO <sub>2</sub>
Operating principle	Non-dispersive infrared (NDIR)
Power supply	4.5~5.25V DC
Current consumption	60mA peak, 8mA avg.
Accuracy	±(50ppm+3% of measurement) in the range of 300~5,000ppm CO <sub>2</sub>
Response time (T90)	2 min. (diffusion)
Operating temperature range	0~50°C
Storage temperature range	-30~70°C
Communication port	UART/ I2C (gas conc. output 0~10,000ppm)
Measurement interval	2 sec. *TBD
PWM output (1kHz)	0~100% duty cycle for 0~5,000ppm, CMOS output
Dimensions	32 x 17 x 7.4 (mm)
Weight	approx. 3g

**NOTE:** CDM7160 is an ESD-sensitive product. No ESD protection components such as zener diodes or varistors are used in this product. It is recommended that ESD protection equipment be used for handling the module during assembly of application products. It is also recommended that ESD protection components and/or an ESD protection enclosure should be used as required for the intended application when this product is embedded into finished products.

**IMPORTANT:** This product is designed for use in indoor air quality control systems, including variable air volume systems and demand controlled ventilation systems. Please consult Figaro prior to use of this product in other applications. This product is ***not*** designed and authorized for use as a critical component in life support applications wherein a failure or malfunction of the products may result in injury or threat to life.

Figaro Engineering Inc. reserves the right to make changes without notice to this product to improve reliability, functioning or design.