

# CDM7162-C00 - Pre-calibrated CO<sub>2</sub> Module

## Features:

- \* Small size
- \* Low power
- \* High accuracy
- \* Single light source, dual wavelength system

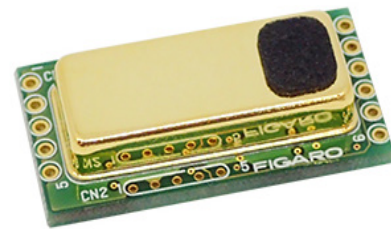
## Applications:

- \* Indoor air quality control
- \* Fresh air ventilators
- \* Air conditioners
- \* Automatic fans and window openers
- \* Safety measures for lithium-ion batteries

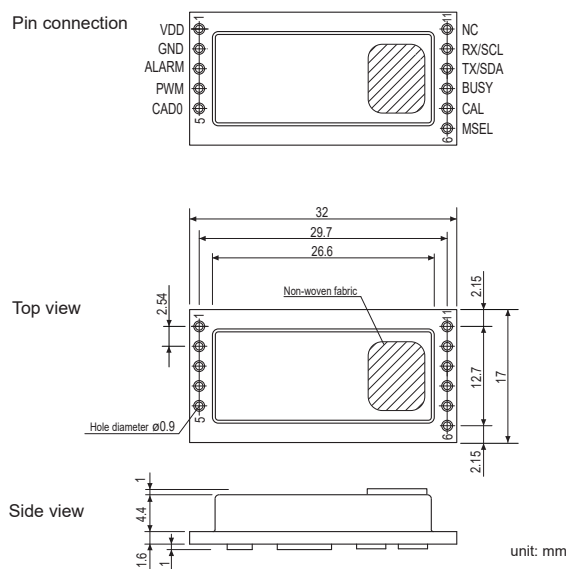
The **CDM7162\*** CO<sub>2</sub> module uses a compact NDIR CO<sub>2</sub> sensor, featuring excellent performance characteristics, including high accuracy and low power consumption. Stable long term operation and output are achieved by dual IR detectors and Figaro's proprietary signal processing technology.

Every module is individually calibrated and is provided with both a UART and I2C digital interface. The CDM7162 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.

\* CDM (Carbon Dioxide sensor Module)



## Dimensions



## 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 (internal pull up)        |
| 6      | MSEL   | Communication mode signal input I2C/UART (internal pull up) |
| 7      | CAL    | Air/zero adjustment input (internal pull up)                |
| 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**

|                      |  |
|----------------------|--|
| Product name         | Carbon dioxide (CO <sub>2</sub> ) sensor module  |
| Model No.            | CDM7162-C00                                      |
| Detection range      | 360~5,000ppm CO <sub>2</sub>                     |
| Operating principle  | Non-dispersive infrared (NDIR)                   |
| Power supply         | 3.3±0.3V or 5.0±0.5V DC                          |
| Current consumption  | 75mA peak, 25mA avg. (@5V DC)                    |
| Accuracy (*)         | ±(50ppm+3% of reading)                           |
| Pressure dependency  | approx 1% of reading / kPa                       |
| Response time (T90)  | 90 sec. (diffusion)                              |
| Operating conditions | 0~50°C/0~85%RH (no condensation)                 |
| Storage conditions   | -30~60°C (tentative) /0~85%RH (no condensation)  |
| Communication port   | UART/ I2C (gas conc. output 360~65,535ppm)       |
| Measurement interval | 2 sec.   |
| PWM output (1kHz)    | 0~100% duty cycle for 0~5,000ppm,<br>CMOS output |
| Alarm output         | CMOS output:<br>High > 1,000ppm Low < 900ppm     |
| Warm up time         | ≥5 min.  |
| Dimensions           | 32 x 17 x 8.0 (mm)                               |
| Weight               | approx. 3.0 g                                    |

\* Represents accuracy at the time of factory test, and does not represent accuracy after delivery from factory.

The accuracy is defined in a measuring range from 360 to 5,000ppm with power supply voltage of either 3.3+/-0.3V or 5.0+/-0.5VDC.

**NOTE** : CDM7162 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.

All sensor characteristics shown in this brochure represent typical characteristics. Actual characteristics vary from sensor to sensor. The only characteristics warranted are those in the Specification table above.

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