

CDM7160 - Pre-calibrated CO₂ Module

Features:

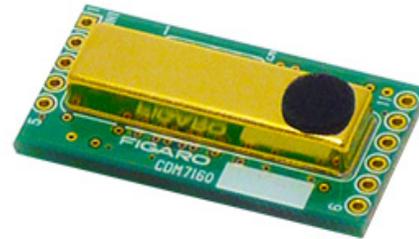
- * Small size
- * Low power
- * High accuracy
- * Absolute measurement via dual sensors

Applications:

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

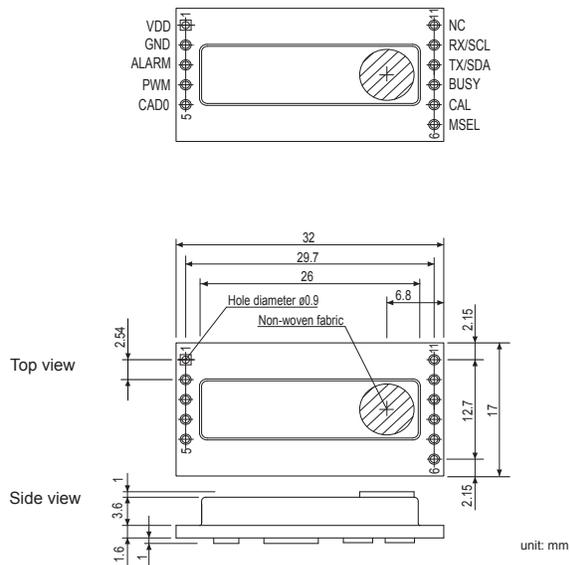
The **CDM7160** CO₂ module uses a compact NDIR CO₂ sensor, featuring excellent performance characteristics, including high accuracy and low power consumption. Two detector elements inside the module make absolute measurement possible.

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 ₂) sensor module |
| Model No. | CDM7160 |
| Detection range | 300~5,000ppm CO ₂ |
| 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 ₂ |
| 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.