

CDM4160 - Pre-calibrated module for carbon dioxide

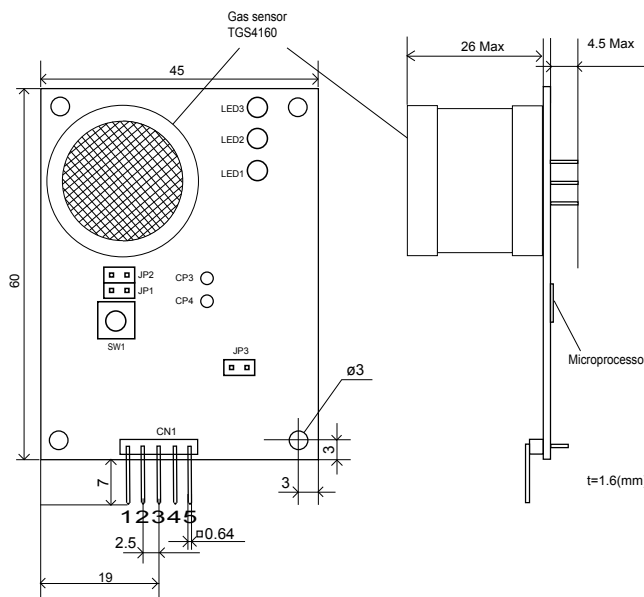
Features:

- * High selectivity to CO₂
- * Long life
- * Maintenance free
- * Pre-calibrated
- * Low cost
- * Wide detection range
- * Excellent durability

Applications:

- * Indoor air quality control in offices, homes, and factories
- * CO₂ monitors
- * Agricultural applications

CDM4160 is a new unit which uses TGS4160, Figaro's durable solid electrolyte CO₂ sensor. Due to Figaro's proprietary idea for signal processing with a microcomputer, no maintenance is required for this module. By application of DC voltage to the module, an analog output voltage proportional to CO₂ concentration can be obtained. The module can generate a control signal based on a user-selectable threshold concentration. The features mentioned above make this module ideal for air quality control applications in homes, offices and factories as well as in the field of agriculture.



CDM4160 dimensions

| Pin No. | Name | Description |
|---------|-------|--------------------------------------|
| 1 | VIN | Power supply input |
| 2 | VCONC | CO ₂ concentration output |
| 3 | CTRL | Control signal output |
| 4 | TRBL | Trouble signal output |
| 5 | GND | Common ground |

CDM4160 pin designations of CN1

NOTE: CN1 should be MB5P-90S, mfg. by JST.

Specifications:

| | | | |
|---|---|--|---|
| Product name | Carbon dioxide (CO ₂) sensor module | | |
| Model No. | CDM4160-L00 | CDM4160-M00 | CDM4160-H00 |
| Detection range | 400 to 4,500ppm | 400 to 9,000ppm | 400 to 45,000ppm |
| Sensor (principle) | TGS4160 (Solid state electrolyte) | | |
| Accuracy (*1) | Approx. ±20% | | |
| Power supply | DC5.0±0.2V regulated | | |
| Power consumption | 1.3W (typical) | | |
| Inrush current | 600mA (max) | | |
| Operational temperature & humidity range | -10°~+50°C, 5~95%RH (avoid condensation) | | |
| Storage temperature & humidity range | -20°~+60°C, 5~90%RH (pack in a moisture proof bag) | | |
| Warm up time | 2 hours | | |
| CO ₂ concentration signal (*2) | Continuous analog output proportional to CO ₂ concentration | | |
| | V _{conc} = CO ₂ concentration/1,000 (DC 4.5V full scale) | V _{conc} = CO ₂ concentration/2,000 (DC 4.5V full scale) | V _{conc} = CO ₂ concentration/10,000 (DC 4.5V full scale) |
| Control signal | ON: HIGH output (when CO ₂ conc. exceeds threshold) OFF: LOW output | | |
| | 800/ 1,000/ 1,500/ 2,000 (ppm) | 1,000/ 2,000/ 5,000/ 8,000 (ppm) | 5,000/ 10,000/ 20,000/ 40,000 (ppm) |
| Trouble signal | ON: LOW output (sensor trouble) OFF: FLOAT NC | | |
| LED display | Green LED: Lights while power is on (blinks during warm up) | | |
| | Yellow LED: Blinks during trouble | | |
| | Red LED: Lights when CO ₂ concentration exceeds the threshold | | |
| Reset switch | Establishes the ambient CO ₂ concentration as 400ppm when pushed | | |
| Dimension | 45 x 60 x 31mm (45 x 67 x 31mm incl. CN1) | | |
| Weight | approx. 22g | | |

Note 1: Assumes benchmark is set accurately at 400ppm of CO₂. This value does not contain long term drift.

Note 2: In this module, the CO₂ concentration is calculated by measuring the relative change of sensor output at the measuring point from sensor output in clean air (assumed to be 400ppm of CO₂).

IMPORTANT: 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.