FIGARO

PRODUCT INFORMATION

CDM4161 - Pre-calibrated module for carbon dioxide

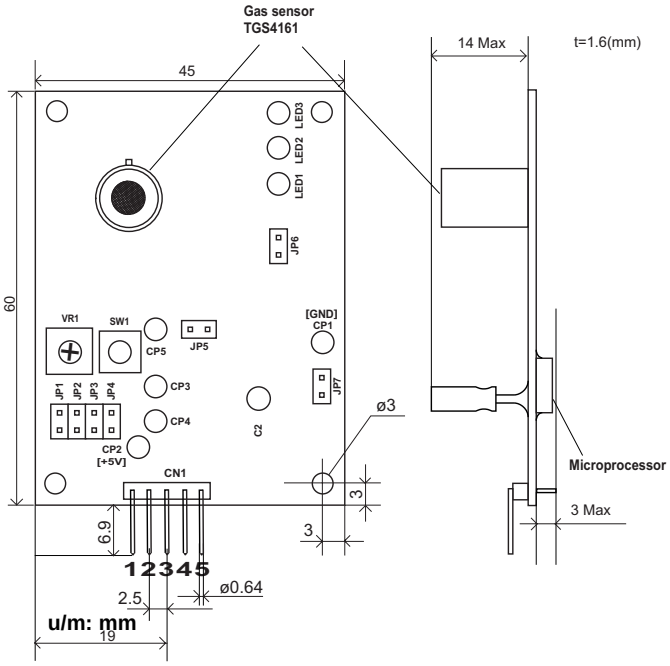
Features:

* **High selectivity to CO_2**
* **Maintenance free**
* **Low power consumption**
* **Long life**
* **Compact size**
* **Pre-calibrated**
* **Low cost**

Applications:

* **Indoor air quality control**
* **CO_2 monitors**

CDM4161 is a new unit which uses TGS4161, Figaro's low-power consumption solid electrolyte CO_2 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 CO_2 concentration can be obtained. The module can generate a control signal based on a user-selectable threshold concentration. When compared with traditional CO_2 sensor modules using IR sensors, Figaro's CO_2 module is much more cost effective, making this module the ideal choice for indoor air quality control systems.



CDM4161 dimensions

Pin No.	Name	Description
1	V_{IN}	Power supply input
2	V_{CONC}	CO_2 concentration output
3	CTRL	Control signal output
4	TRBL	Trouble signal output
5	GND	Common ground

CDM4161 pin designations of CN1

NOTE: CN1 should be MB5P-90S, mfg. by JST.
Recommended receptacle for connector: 05JQ-BT, mfg. by JST.

Specifications:

Product name	Carbon dioxide (CO_2) sensor module	
Model No.	CDM4161-L00	CDM4161-M00
Detection range	400 to 4,000ppm	400 to 8,000ppm
Sensor (principle)	TGS4161 (solid state electrolyte)	
Accuracy (*1)	approx. ±20% full scale	
Power supply	DC5.0±0.2V regulated	
Power consumption	300mW (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	
CO2 concentration signal (*2)	Continuous analog output proportional to CO_2 concentration	
	Vconc = CO_2 concentration/1,000 (DC 4V full scale)	Vconc = CO_2 concentration/2,000 (DC 4V 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)
Malfunction signal	ON: LOW output (sensor malfunction) 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	
Dimensions	45 x 60 x 19mm (45 x 67 x 19mm incl. CN1)	
Weight	approx. 17g	

Note 1: Assumes benchmark is set accurately at 400ppm of CO_2. This value does not contain long term drift.
Note 2: Inthis module, the CO_2 conentration 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 CO_2).

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.

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