



CO₂ NDIR Module

Model : B-530G

DATA SHEET

General

The B-530G CO₂ module is designed to have robust and reliable stability, persistent high accuracy independent from Temperature for the use in harsh environment.

The Sensor is sealed to be resistance to 99% humidity harsh environment such as of factory, greenhouses, farms, so on.

Features

- Non-Dispersive Infrared (NDIR) technology used to measure CO₂ levels.
- Robust to show high stability and strength under extreme condition.
- Resistant to 99% humidity.
- Pre-calibrated
- 3 and 7 pin connector is available.
- UART, AVO output is available.

B-530G CO₂ Module

Specifications

General Performance

Operating Temperature

-10 ~ 60°C

Operating Humidity

0 ~ 99% RH (Non-condensing)

Storage Temperature

-40°C ~70°C

CO₂ Measurement

Sensing Method

NDIR (Non-dispersive Infrared)

Measurement Range

0 to 2,000/3,000/5,000/10,000 ppm

0 to 2%, 3%, 5% vol.(Option)

Accuracy

0 to 10,000ppm : ±30ppm ±3% of reading

2%, 3%, 5% vol.: ±300ppm ±3% of reading

Step Response Time(90%)

120 sec

Sampling Interval

3 seconds

Electrical Data

Power Input

9 to 18VDC (±10% Regulation)

Current consumption

Normal : 25 mA / Peak : 130mA

Output connector

3Pin / 7Pin (Molex 053015)

Output

Digital

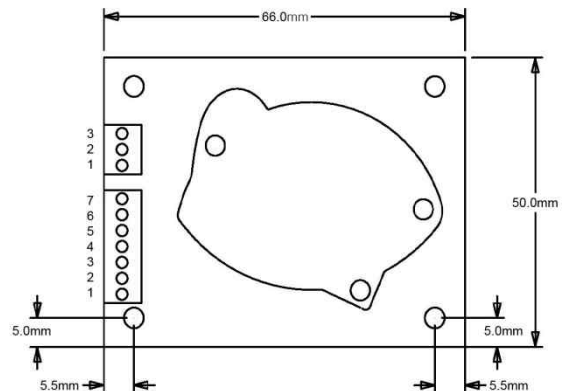
UART

Asynchronous serial,TTL Level, 38,400bps

Analog Voltage Output

VDC 0.5 ~ 4.5V (linear output)

Dimensions



Connections

Connector 1 (CN1)

Pin No.	Name	Description
1	VCC	Power
2	AVO	Analog Voltage Output
3	GND	Power Ground

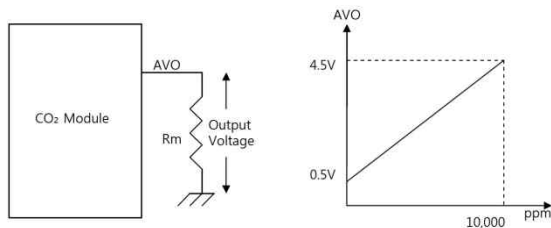
Connector2 (CN2)

Pin No.	Name	Description
1	NC	No Connection
2	TX	UART TX
3	RX	UART RX
4	GND	Power Ground
5	NC	No Connection
6	NC	No Connection
7	AVO	Analog Voltage Output

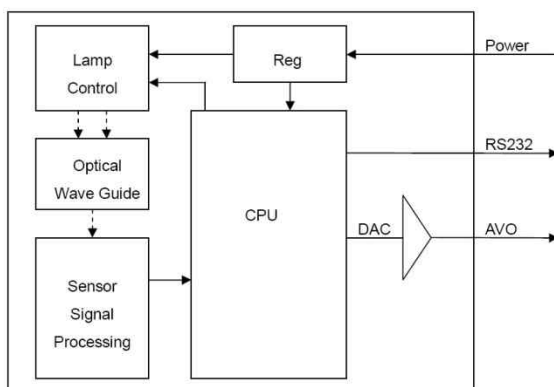
Output Description

Analog Voltage Output

Output Range	0.5 ~ 4.5V (linear output)
Output Resolution	12 bits
Minimum Load(R _m)	10 KΩ



Block Diagram



UART Protocol

Item	Description
Baud rate	38,400 BPS
Parity	No Parity
Number of Bits	8 Bits
Stop Bit	1 Bit

Data Transmit

Interval : 3 seconds

Handshake protocol : None (Data is transmitted to outer device periodically)

Data Format

B1	B2	B3	B4	BL	'p'	'p'	'm'	CR	LF
B1 ~ B4				4 byte CO2 density string					
BL				Blank: 0x20					
'ppm'				'ppm' string					
CR				Carriage return : 0x0D					
LF				Line feed : 0x0A					

EX) In case 1,255 ppm,

0x31 0x32 0x35 0x35 0x20 0x70 0x70 0x6D
0x0D 0x0A

'1255 ppm<CR> <LF>'

if the concentration value is less than 1,000, the space(0x20) characters is filled on previous empty digit.

Operating mode (Jumper selection)

Jumper "D" :Factory calibrated operating mode

Jumper "F" :ACDL(Self-recalibration)operating mode

Jumper "Z" :Manual recalibration mode

(Re-cal the factory calibration."D")

*** Refer ACDL/MCDL user manual to find detail information.**

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3 / 3page