

B-530

CO2 sensor module

Data Sheet

Revision 1.0



B-530 CO2 Module

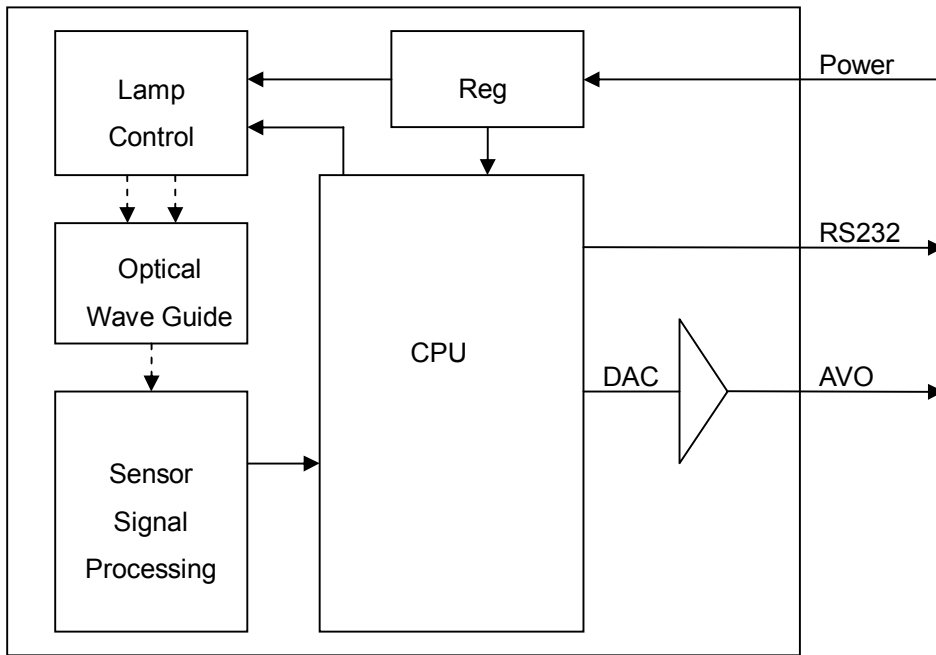
The B-530 CO2 module is designed to measure CO2 level in the air. This product is maintenance-free, low cost and integrated into other equipments especially. It's main application area is Indoor Air Quality, HVAC, CO2 transmitter, Agriculture.



1. Specification

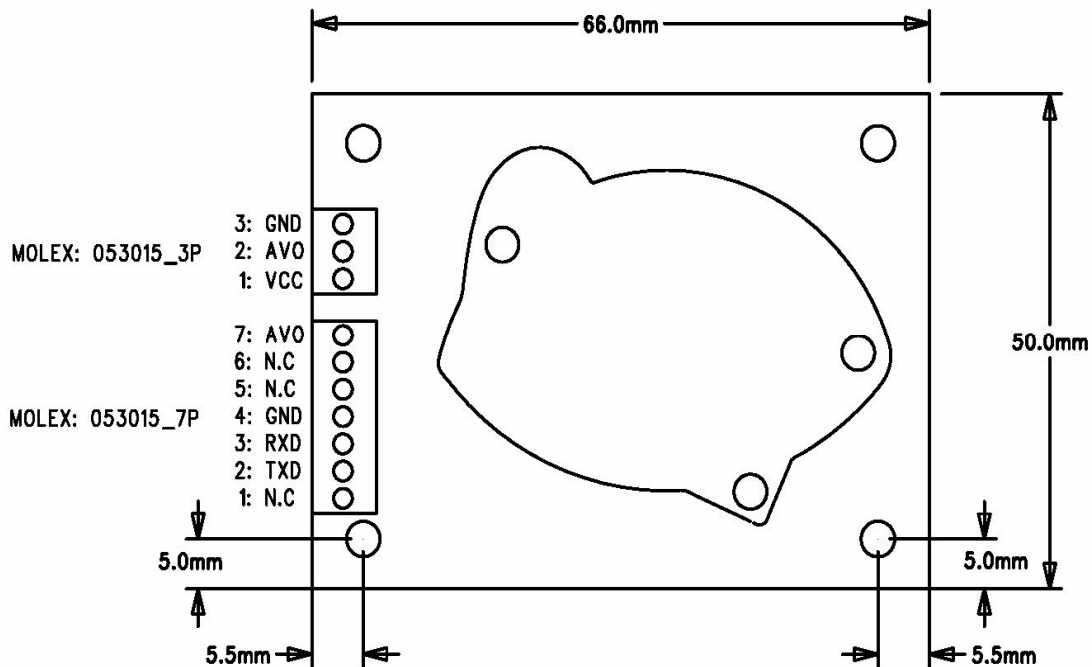
	Item	Specification
General	Operating Temperature	0℃ ~ 50℃
	Operating Humidity	0 ~ 95% RH(Non-condensing)
	Operating Environment	Residential, Commercial spaces
	Storage Temperature	-30℃ ~ 70℃
CO2 Measurement	Sensing Method	NDIR(Non-dispersive Infrared)
	Measurement Range	0 to 10,000 ppm
	Precision	±30ppm ±5%
	Step Response Time(90%)	30 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	UART	Asynchronous serial, TTL Level, 38400BPS
	Analog Voltage Output	VDC 0.5 ~ 4.5V (linear output)
Mechanical Data	Dimension(L x W x H)	50 x 66 x 25.5 mm

2. Block Diagram



[Fig. 1 Block Diagram]

3. Module Outline



[Fig. 2 Module Outline]

4. Connection

Connector 1 (CN1)

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

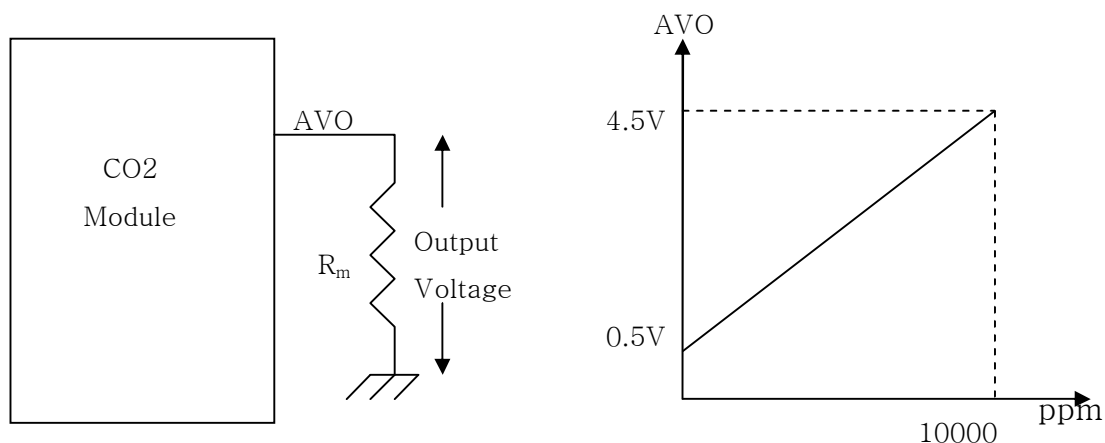
Connector2(CN2)

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

5. Output Description

5-1. Analog Voltage Output

Output Range.	0.5 ~ 4.5V (linear output)
Output Resolution	12 bits
Minimum Load(R_m)	10 K Ω



[Fig. 3 Analog Voltage Output]

5-2. UART Protocol

■ Setup

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

■ Data Transmit

Interval : 3 second

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

■ Data Format

B1	B2	B3	B4	BL	'p'	'p'	'm'	CR	LF
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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>'