General

The B-530 series is designed to measure CO2 level in the air. Its Persistent Stability and Temperature Effect Resistance besides easy management are much favored by customers in stocks raising, scientific projects, etc. B-530(G) model is sealed to be resistance to 99% humidity harsh environment such as factory, green houses, farms and so on.

ELT Sensor
Data Sheet for B-530(G)
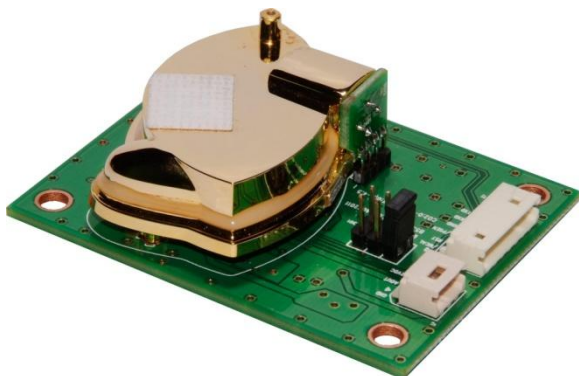
Features

- Non-Dispersive Infrared (NDIR) technology used to measure CO_2 levels.

- Robust to show high stability and strength under extreme condition.

- Resistant to 0~95%RH Humidity.

    (0~99%RH Humidity is option)

- Pre-calibrated

- 3 and 7 pin connector is available.

- UART, AVO output is available.

- Size : 66mm x 50mm x 22.2mm

B-530(G) CO$_2$ Module Specifications

General Performance

Operating Temperature

-20 ~ 65℃

Operating Humidity

0 ~ 95% RH (Non-condensing)

'G' option : 0 ~ 99% RH (Non-condensing)

Storage Temperature

-30℃ ~70℃

CO$_2$ Measurement

Sensing Method

NDIR (Non-dispersive Infrared)

Measurement Range

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

0 to 5% $_{vol.}$(Option)

Accuracy

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

5% $_{vol.}$: ±300ppm ±3% of reading

Step Response Time(90%)

120 sec

Sampling Interval

3 seconds

Electrical Data

Power Input

12VDC(9 to 15VDC) (±2% Regulation)

Current consumption

Normal : 33 mA / Peak : 230mA

Output connector

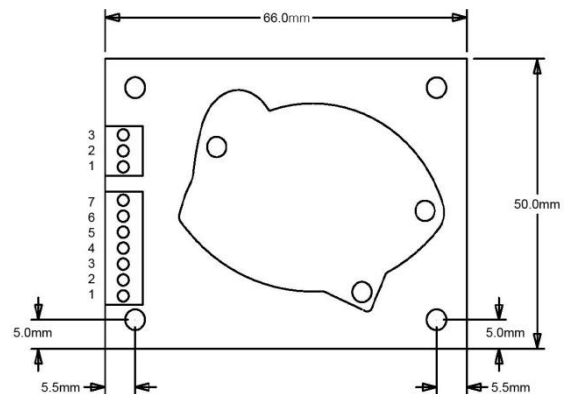3Pin / 7Pin (Molex 053015)

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	12V (9~15V 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	ACDL	Auto Calibration

* ACDL function should not be used for Agricultural application.

Output Description

Analog Voltage Output

Output Range	0.5 ~ 4.5V (linear output)
Output Resolution	12 bits
Minimum Road(Rm)	10 KΩ
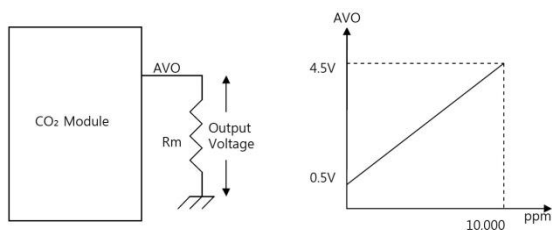
Block Diagram
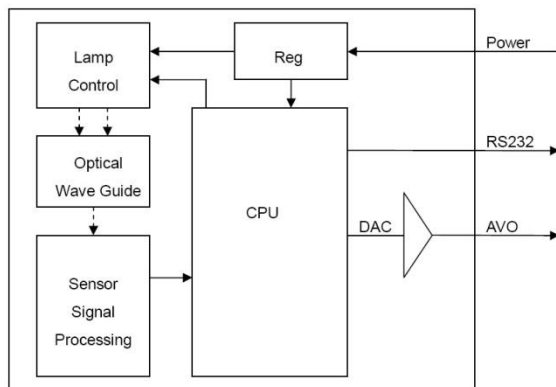
UART Protocol

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.