

# Carbon Dioxide (CO<sub>2</sub>) Transmitter (3-wired type) Operation Manual CD-300(G) / CD-300L(G)



CD-300(G)



CD-300L(G)  
(with LCD Display)

## General

CD-300(G) and CD-300L(G) Transmitter type models of CO<sub>2</sub> Sensor, which are for 0-20mA, 4-20mA Current output module or 0-10V, 2-10V Voltage output module (Jumper select). These models give 3-wired input power (2 PWR lines, 1 Common GND line).

## Features

- **Non-Dispersive Infrared (NDIR) technology**
- **Either of four (2 Set of Analog Voltage or 2 set Current) output can be chosen by Jumper.** (4~20mA/2~10V/0~20mA/0~10V)
- **Customer could select multiple functions**
  - Factory calibration mode is available.
  - 10 minutes manual recalibration or weekly Auto-Calibration is settable.
- **Simple maintenance** (S-300(G) sensor is detachable from main board, which gives easier manipulation on sensor module.)
- **Size** : 123 x 69 x 40 (mm)

## CD-300(G)/CD-300L(G) Transmitter Specifications

### General Performance

#### Operating Temperature range

-10°C ~ 60°C

#### Operating Humidity range

0 ~ 95% RH (Non-condensing)

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

#### Storage Temperature

-30°C ~70°C

### CO<sub>2</sub> Measurement

#### Sensing Method

NDIR (Non-dispersive Infrared)

#### Measurement Range

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

(Jumper selectable)

(2%/3%/5%/7% are available)

#### Accuracy

±30ppm ±5%

#### Response Time(90%)

150 seconds

#### Sampling Interval

3 sec.

### Operation mode selection

Factory calibration mode should be used  
(Automatic calibration mode is only Indoor Air  
Quality Monitoring).

**Two manual recalibration methods are available** with manual recalibration by change of J2 & J4 or by using TRB-100ST Jig (TRB-100ST Jig : On Sale)

### Electrical Data

#### Input Power

24VDC ± 20% (3-Wired)

### Output Signals

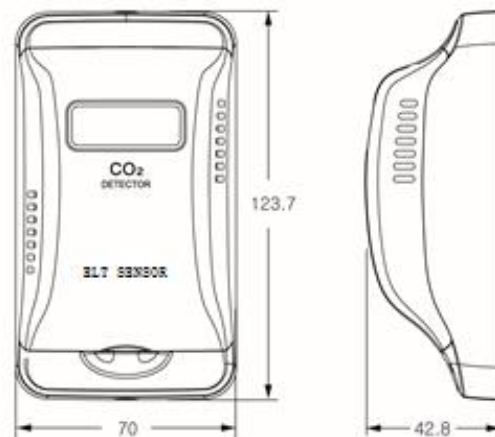
4 ~ 20mA or 2 ~ 10VDC

0 ~ 20mA or 0 ~ 10VDC

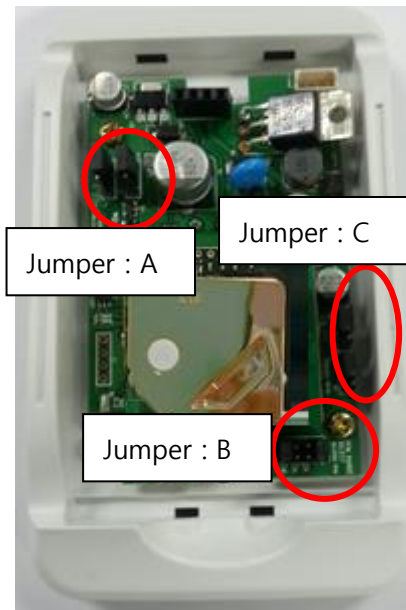
, (Jumper selectable

-voltage output or current output)

### Dimensions (unit : mm)



### Front Inside View



### Rear View



### Jumper Function Descriptions

■ **Jumper A (J7, J3) group : Voltage, Current output and range selection.**

V : Analog Voltage output

I : Current output

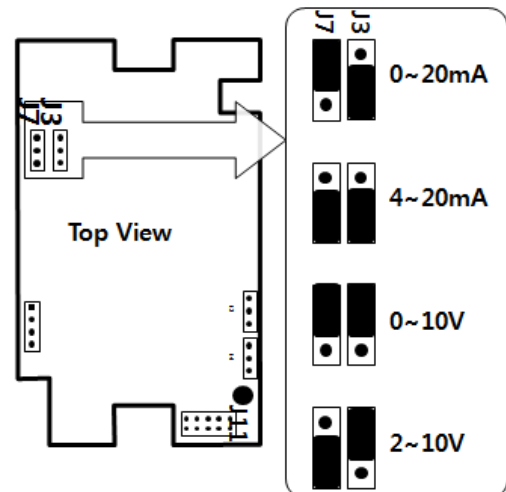
0~20mA : 0~20mA output @ Current.

0~10V output @ Voltage

4~20mA : 4~20mA output @ Current.

2~10V output @ Voltage.

● **[J7,J3] Output Mode**



Example setting :

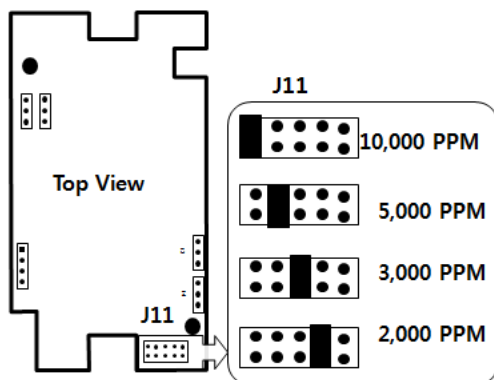


⇒ Current output and 0~ 20mA output

■ Jumper B(J11) group : CO2 Measurement range selection.

- 10K ppm : 0 ~ 10,000ppm CO2
- 5K ppm : 0 ~ 5,000ppm CO2
- 3K ppm : 0 ~ 3,000ppm CO2
- 2K ppm : 0 ~ 2,000ppm CO2

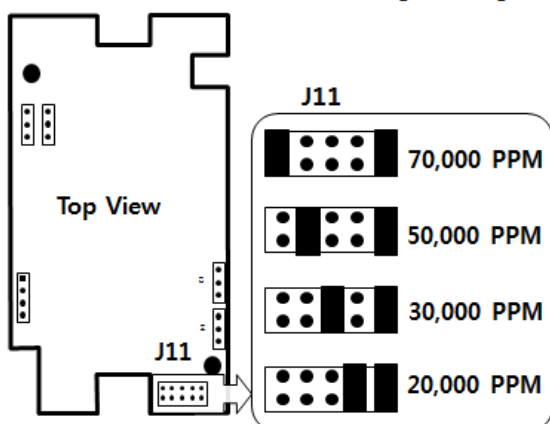
● [J11] PPM Measurement Range (Low range)



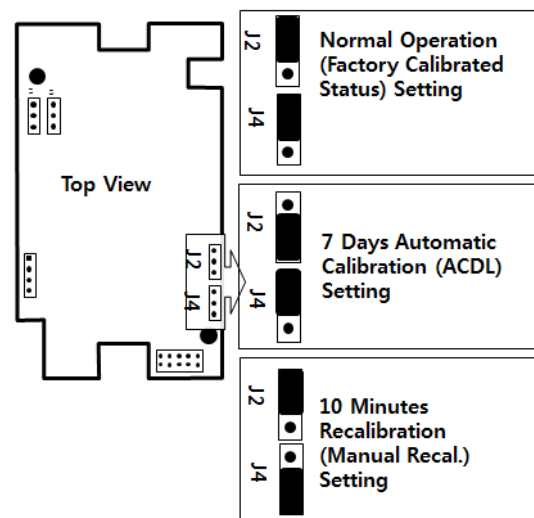
■ Jumper B(J11) group for High CO2 Measurement range selection.

- 70K ppm : 0 ~ 70,000ppm CO2
- 50K ppm : 0 ~ 50,000ppm CO2
- 30K ppm : 0 ~ 30,000ppm CO2
- 20K ppm : 0 ~ 20,000ppm CO2

● [J11] PPM Measurement Range (High range)



● [J2,J4] Operation Mode Selection with S-300(G) module



Example setting :

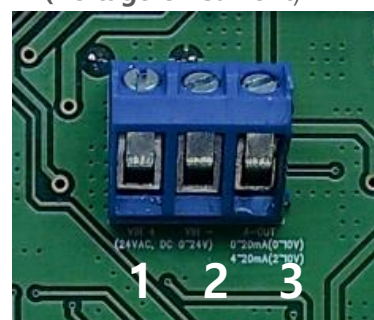


⇒ Weekly Auto-calibration or 10 minutes Manual-Calibration setting is available

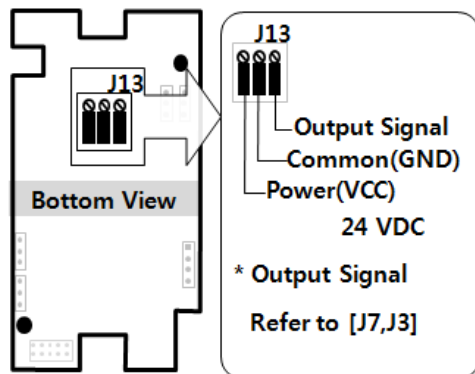
Wiring Method

1. VIN+: 24VDC+,
2. VIN- : Common GND
3. A-OUT: Output signal

(Voltage or Current).



● [J13] Wiring Connector



**Output signal calculation examples**

Ex) 3,000ppm range 0~10V mode.

Read voltage 3.234V

$$3,000\text{ppm} / 10\text{V} * 3.234 = 970 \text{ ppm.}$$

Ex) 3,000ppm range 2~10V mode.

Read voltage 3.234V

$$(3.234\text{V} - 2\text{V}) * (3000\text{ppm} / 8) = 462 \text{ ppm.}$$