# Methane/Ethylene/Propane/Butane (3-Wired Type) Datasheet CH4/C2H4/C3H8/C4H10-CD300(G) CH4/C2H4/C3H8/C4H10-CD-300L(G)

C-H-CD-300(G)

C-H-CD300L(G)

## General

C-H-CD300 series are a transmitter type model of CH4/C2H4/C3H8/C4H10 NDIR dual gas sensors
( ※ C-H-CD300 series detect only 1 gas per 1 transmitter.)

These models give current ouptut or analog output and support 3-wired input power.
(2 Power lines, 1 CommonGND line)

## Features

• Non-Dispersive Infrared(NDIR)technology

• Either of four (2 Set of Analog Voltageor 2 set Current) output can be chosen by Jumper. (4~20mA/2~10V/0~20mA/0~10V)

• Customer could selectmultiple functions
-. Factory calibration mode is available.
-. 10 minutesmanual recalibration or weekly Auto-Calibration issettable.

• Simple maintenance : sensor module is detachable from main board, which gives easier manipulation on sensor module.

• Size : 124 x 70 x 43 (mm)

# CH-CD300(LG)

## General Performance

**Operating Temperature range**
-20℃ ~ 50℃
**Operating Humidity range**
0 ~ 95% RH (Non-condensing)
'G':0~99% RH(Non-condensing)
**Storage Temperature**
-30℃ ~70℃

## Measurement

**Sensing Method**
NDIR (Non-dispersive Infrared)
**Measurement Range**
0~100% LEL
(=Methane 0~50,000ppm)
(=Ethylene 0~27,000ppm)
(=Propane 0~21,000ppm)
(=Butane 0~18,000ppm)
**Resolution:**
CH4 : 500ppm vol. (=1% LEL)
C2H4 : 270ppm vol. (=1% LEL)
C3H8 : 210ppm vol. (=1% LEL)
C4H10 : 180ppm vol. (=1% LEL)
**Detection Limit:**
CH4 : 1,000ppm vol. (=2% LEL)
C2H4 : 810ppm vol. (=3% LEL)
C3H8 : 840ppm vol. (=4% LEL)
C4H10 : 900ppm vol. (=5% LEL)
**Accuracy**
±3% of F.S
**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 availablewithmanual recalibration by change of J2 & J4 or by using TRB-100ST Jig (TRB-100ST Jig : OnSale)

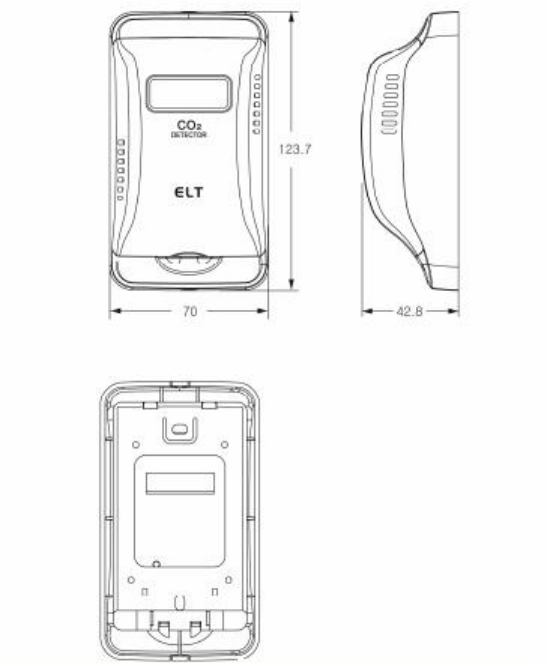
## Electrical Data

**Input Power**
24VDC± 20%, (3-Wired)

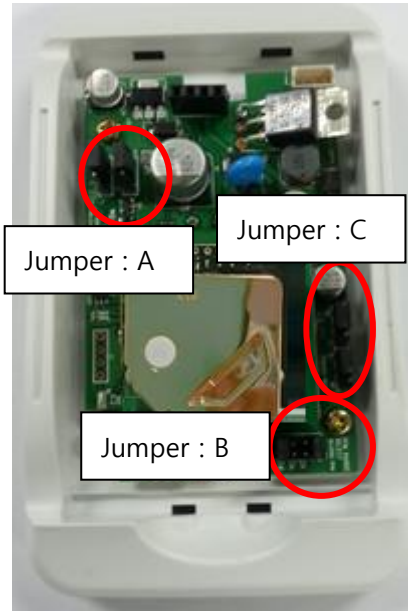
## Output Signals

4 ~ 20mAor2 ~ 10VDC
0 ~ 20mA or0 ~ 10VDC
, (Jumper selectable -
voltage output or current output)

## Dimensions (unit : mm)



## Front Inside View

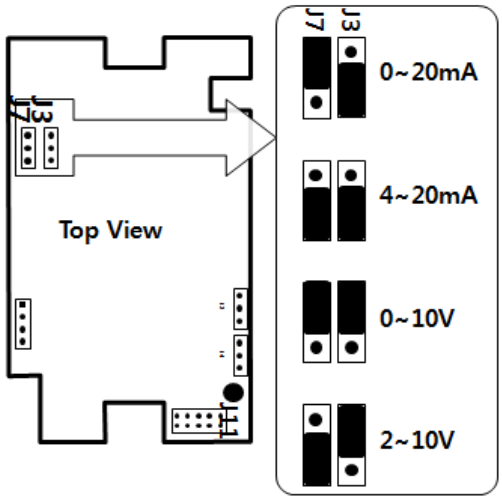



## Rear View

## Jumper Function Descriptions

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

● **[J7,J3] Output Mode**




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

Example setting :

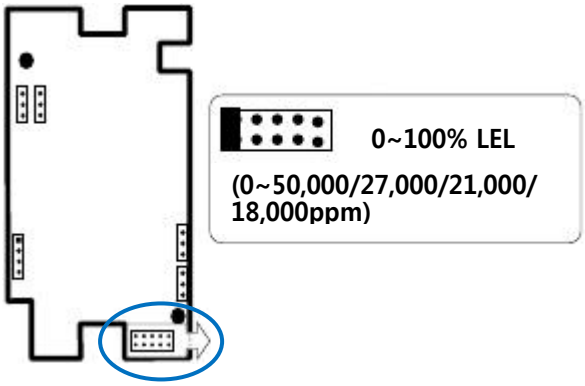
⇨ Current , 0~ 20mA output

■ **Jumper B(J11) : Reading Range Mode**

0~100% LEL

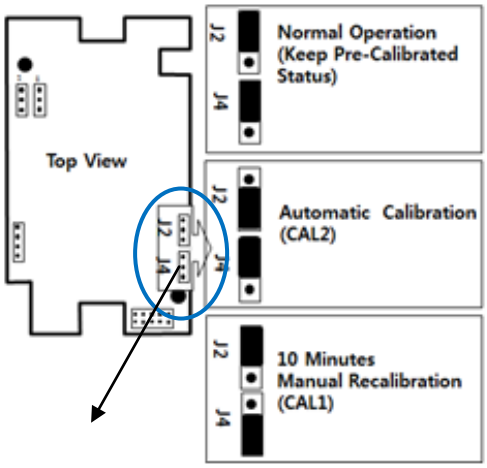
(0~50,000ppm/27,000/21,000/18,000ppm

- CH4/C2H4/C3H8/C4H10)




**※ Caution! Please don't change Jumper B.**

■ **Jumper C(J2,J4) Operating Mode and 10 Minute Manual Calibration**

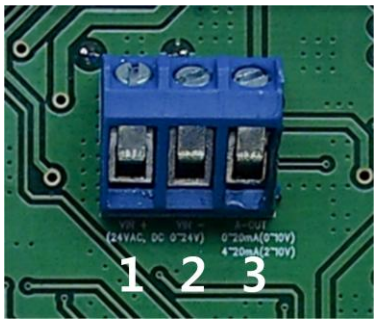



## Wiring Method

**1. VIN+: 24VDC+**

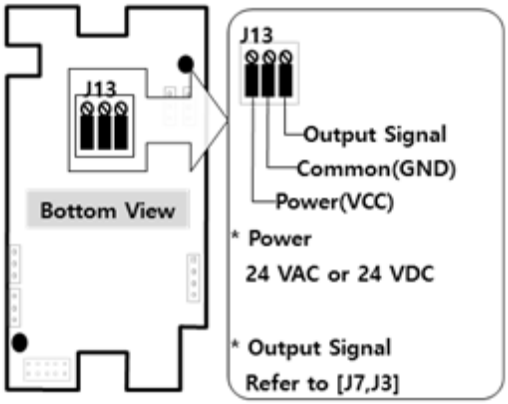
**2. VIN-: Common-GND**

**3. A-OUT: Output Signal (Voltage or Current)**




Wire connector.

■**[J13]커넥터 배선**




*** Output signal calculation examples**

**1. Methane sensors**

0~100% LEL (=50,000ppm range)

**EX) 0~10V mode**

Read voltage 3.234V

100%/10V*3.234 = 32.34% LEL

è Displayed on C2H4-CD as 32% LEL

(=50,000ppm / 10V * 3.234 = 16,170 ppm.)

**EX) 2~10V mode**

Read voltage 3.234V

100%/10V*(3.234V-2V)/8V = 15.425% LEL

è Displayed on C2H4-CD as 15% LEL

round-down below zero.
(=50,000ppm/8V*(3.234V-2V)2V)=7,712 ppm.)
LCD display format is '% LEL' as default and can be provided as 'PPM' format display.

**2. Ethylene sensors**

0~100% LEL (=27,000ppm range)

**Ex) 0~10V mode**

Read voltage 3.234V

100%/10V*3.234 = 32.34% LEL

è Displayed on LCD as 32% LEL

(=27,000ppm / 10V * 3.234 = 8731 ppm.)

**Ex) 2~10V mode**

Read voltage 3.234V

100%/10V*(3.234V-2V)/8V = 15.425% LEL

è Displayed on LCD as 15% LEL round-down below zero.

(=27,000ppm/8V*(3.234V-2V)2V)=4164 ppm.)
LCD display format is '% LEL' as default and can be provided as 'PPM' format display.

**3. Propane sensors**

0~100% LEL (=21,000ppm range)

**Ex) 0~10V mode**

Read voltage 3.234V

100%/10V*3.234 = 32.34% LEL

è Displayed on LCH4-CD as 32% LEL

(=21,000ppm / 10V * 3.234 = 6,791 ppm.)

**Ex) 2~10V mode.**

Read voltage 3.234V

100%/10V*(3.234V-2V)/8V = 15.425% LEL

è Displayed on LCH4-CD as 15% LEL round-down below zero.

(=21,000ppm/8V*(3.234V-2V)2V)=3,239 ppm.)
LCD display format is '% LEL' as default and can be provided as 'PPM' format display.

**4. Butane sensors**

0~100% LEL (=18,000ppm range)

**Ex) 0~10V mode**

Read voltage 3.234V

100%/10V*3.234 = 32.34% LEL

è Displayed on LCH4-CD as 32% LEL

(=18,000ppm / 10V * 3.234 = 5,821 ppm.)

**Ex) 2~10V mode**

Read voltage 3.234V

100%/10V*(3.234V-2V)/8V = 15.425% LEL

è Displayed on LCH4-CD as 15% LEL round-down below zero.

(=18,000ppm/8V*(3.234V-2V)2V)=2,776 ppm.)
LCD display format is '% LEL' as default and can be provided as 'PPM' format display.

**※ Ordering Code**

| 제품 | 비고 |
|---|---|
| CH4/C2H4/C3H8/C4H10-CD300L | With LCD display |
| CH4/C2H4/C3H8/C4H10-CD300G | 0~99%RH (Non-condensing) for Green House |
| CH4/C2H4/C3H8/C4H10-CD300LG | LCD + 0~99%RH(Non-condensing) for Green House |

※ Design or Specification of CH-CD300 Series could be changed without notice.

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