

Carbon Dioxide (CO₂) Transmitter Operation Manual ESCD-100(L)



ESCD-100



**ESCD-100L
(with LCD)**

General

ESCD-100 and ESCD-100L are one board analog output type transmitters of CO₂ Sensor, which are 4-wired or 3-wired supporting.

They give current output or voltage output and various functions are supported like as recalibration function, CO₂ measurement range selections for supporting user convenience.

Features

- **CO₂ SENSOR** : NDIR (Non-Dispersive Infrared) technology
- **LCD Display** model is available (ESCD-100L).
- **Analog Voltage/Current output**
0/4-20mA or 0/2-10V – settable by switch ,
- **3 wired / 4 wired output** – Order option
- **Re-calibration function**
10 minutes manual recalibration(MCDL) or weekly auto-calibration(ACDL) are supported and settable by switch.
- **CO₂ ppm measurement range** -settable by switch
- **Power** of 24V DC, AC.
- **Size** : 123mmx70mmx43mm

Air Quality Sensors

ESCD-100 Specification

General Performance

Operating Temperature range

-5 ~ 55°C

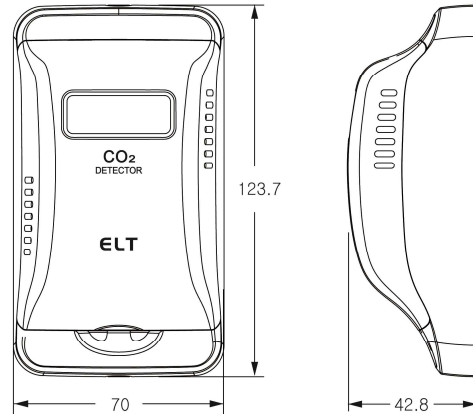
Operating Humidity range

0 ~ 95% RH (Non-condensing)

Storage Temperature

-30°C ~ 70°C

Dimensions (unit : mm)



CO₂ Measurement

Sensing Method

NDIR (Non-dispersive Infrared)

Measurement Range

0 to 2,000/ 3,000 / 5,000 / 10,000ppm
(Optional)

Accuracy

±50ppm ±3%

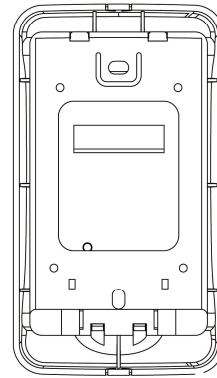
(ACDL operation : ±30ppm ±3% of reading),

Response Time(90%)

150 seconds

Sampling Interval

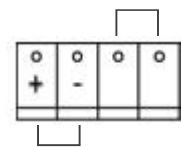
3 sec.



Wiring Method

[4-wired] 24VAC or 24VDC

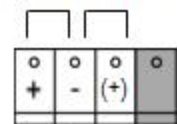
24VAC/24VDC



V/mA Output

[3-wired] 24VDC only

V/mA Output 24VDC



GND
(COM)

(Not
used)

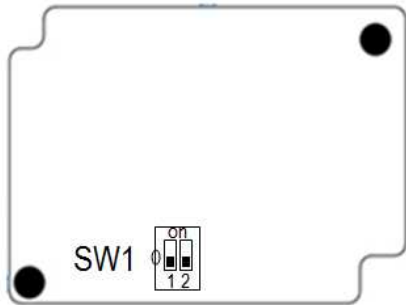
Air Quality Sensors

Output Signals

■ SW1 : Voltage, Current output and range selection.

0 ~ 20mA or 0 ~ 10VDC

4 ~ 20mA or 2 ~ 10VDC



0~20mA



4~20mA



0~10V



2~ 10V

PPM Measurement Range

■ SW2 :CO2 Measurement range selection.

2K ppm : 0 ~ 2,000ppm CO2

3K ppm : 0 ~ 3,000ppm CO2

5K ppm : 0 ~ 5,000ppm CO2

10K ppm : 0 ~ 10,000ppm CO2



0~2k ppm



0~5k ppm



0~3k ppm



0~10k ppm

Operation Mode Selection with CAL1 (10' MCDL) and CAL2 (ACDL)

■ SW3: Calibration selection

● MCDL (CAL1)

Users can do 10 minutes manual calibration (MCDL) when sensor showed much different ppm in severe condition like as agricultural applications.

Procedures : Move the switch [No.1] to 'ON' position and wait over 11 minutes in fresh air. After the setting of ambient air-flowing status to be 400ppm finished, move back the switch to 'OFF' position again.

● ACDL (CAL2)

When users are using the ESCD-100 in indoor ventilation applications like as HVAC, building, houses etc., the ACDL function operation is strongly suggested.

Procedures : Move the switch [No.2] to 'ON' position

Auto calibration acts first 2days, and every 7 days after power on.



Normal



CAL1 (MCDL)



CAL2 (ACDL)

Air Quality Sensors



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