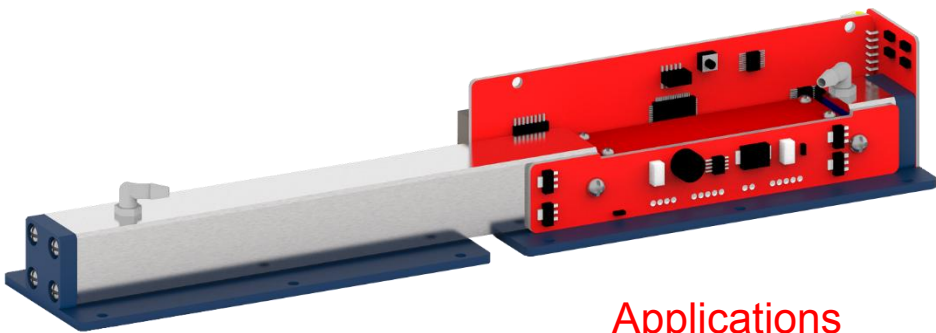


# NDIR CO<sub>2</sub> SENSOR MODULE

LARK-1QLM CO2 2000PPM | Order No.: 001-0A01-803

# DATASHEET



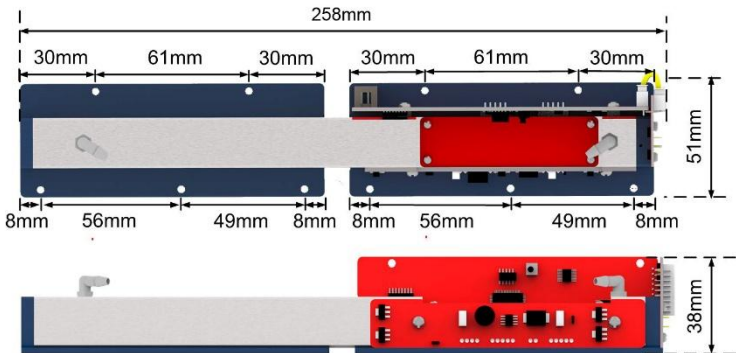
## Parameters

Principle	NDIR
Range	0 ~ 2000 ppm CO <sub>2</sub>
Sampling Mode	Pumping
Response Time	≤ 10 s (@500 ml/min)
Recovery Time	≤ 10 s (@500 ml/min)
Long-term Stability*	± 10 ppm/mon
Temperature	-20 °C ~ 50 °C
Tolerance	± 2 ppm ( 0 ~ 1000ppm) ± 15 ppm ( 1000 ~ 2000ppm)
Zero Temp. Drift	Testing(can be calibrated on line)
Resolution	< 500 ppb
Reading Unit	ppb
Detection Limit	1 ppm
Reading Refresh Rate	16 Hz

\*Long-term Stability: 28 days of zero drift measured in clean air of 0~90% RH, 0~35 °C

## Mechanics

Optic Path	Steel (Gilt internal)
Circuit Board	FR4 / Lead-free HASL
Solder	Sn / Ag / Cu
Mounting Plate	ABS



## Applications

- TOC detection in water
- Out door air quality monitoring
- Atmospheric profile CO<sub>2</sub> measurement

## Merits

- Low zero drift
- High Resolution
- Fast response
- Long life
- High reading refresh rate

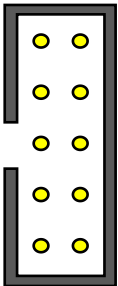
## Dimensions

- Length: 258 mm ± 1 mm
- Width: 51 mm ± 1 mm
- Height: 38 mm ± 1 mm
- Weight: 540 g ± 5 g
- Screw Hole Diameter: 3 mm

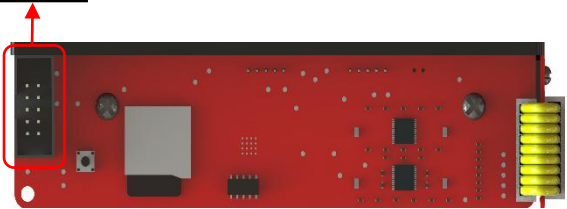
## Electronics

Input Voltage	9 ~ 24 VDC (#9 pin)
Operating Current	< 0.15 A @9 VDC
Power	< 1 W average < 1.5 W @Peak
Warm-up Time	3 minutes (Tolerance $\pm$ 5 ppm) 60 minutes (Tolerance $\pm$ 2 ppm)
Output Voltage	0.4 ~ 2.0 VDC (DAC) (<0.4V is negative drift)
Warranty	18 months*

## Connector Definition



1. NC	2. Vout (DAC)
3. RXD(TTL)	4. TXD(TTL)
5. A+(RS485)	6. B-(RS485)
7. NC	8. GND
9. PWR DC	10. GND



\* Communication protocol is modbus RTU. ID can be modified is SD card.

## Application Condition

Prefer Condition	Room temperature, dry, clean
Safety	None explosion-proof design
Humidity	0% RH ~ 85% RH (No Condensation)*
Flow Rate	300 ~ 800 ml/min
Pressure	0.5 ~ 1.5 ATM (Ambient air pressure measured, without pressure compensation)

## Accessories Included

Tygon Tube
- Length 50 mm $\times$ 2
- Diameter 3.2 mm $\times$ 6.4 mm
- Polyethylene, transparent
Ribbon Cable
- Length 400 mm $\times$ 1
- 10-pin, 28 AWG, gray
- Female connector, 2 $\times$ 5
- 2.54 mm pitch

### \*Non-warranty Case:

- Polluted by condensation, water or dust; Dust and water removing is strongly suggested;
- Damaged by falling, hitting, disassembling, etching or over-loading;
- Label has been torn.

\* Optical cell heating module (PTC) is not included, but can be purchased as an option.

\* Using within this humidity range will not damage the sensing module, but the accuracy of the module will be affected. It is recommended to perform pre-treatment for dust and water removal.

We reserves the right to modify this datasheet and will optimize the product in the future. If you use this product for specific application, please contact us for more technical support.

June 2025

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