NDIR CO_2 SENSOR MODULE

LARK-1QM CO2 5000PPM | Order No.: 001-0A01-202

DATASHEET

Parameters

Principle	NDIR
Range	0 ~ 5000 ppm CO_2
Sampling Mode	Pumping
Response Time	≤ 8 s (@500 ml/min)
Recovery Time	≤ 8 s (@500 ml/min)
Long-term Stability*	± 10 ppm @ 0 ppm
	± 50 ppm @ 1000 ppm
Temperature	-20 ℃ ~ 50 ℃
Tolerance	± 15 ppm (0 ~ 1000 ppm)
(@ 20℃)	± 50 ppm (1000 ~ 5000 ppm)
Zero Temp. Drift	± 15 ppm
Resolution	1 ppm/sec @ 200 ppm
Reading Unit	ppm
Detection Limit	3 ppm
Reading Refresh Rate	16 Hz

* Long-term stability: 28 days of zero drift measured in clean air of 0 ~ 90% RH, 0 ~ 35 ℃

Mechanics

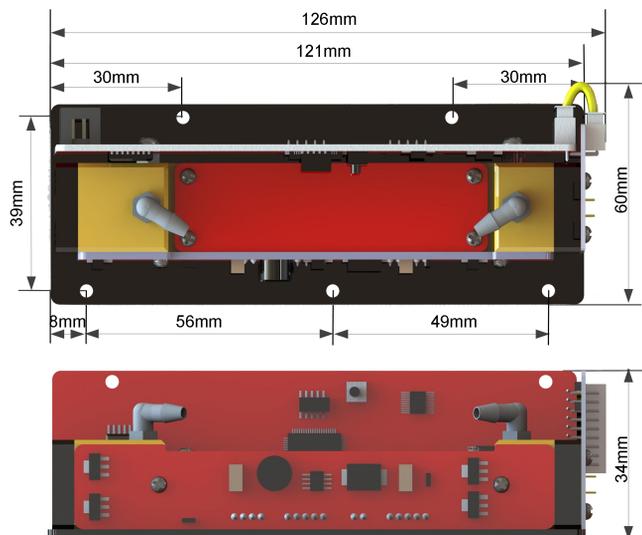|	
Optic Path	Steel
Circuit Board	FR4 / Lead-free HASL
Solder	Sn / Ag / Cu
Mounting Plate	ABS

Applications

- Out door air quality monitoring
- TOC in water and OCEC in air measurement

Merits

- Small error
- Small size
- Fast response
- High reading refresh rate
- RS485 modbus RTU

Dimensions

- Length: 126 mm ± 1 mm
- Width: 60 mm ± 1 mm
- Height: 34 mm ± 1 mm
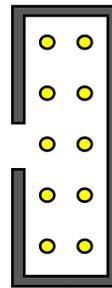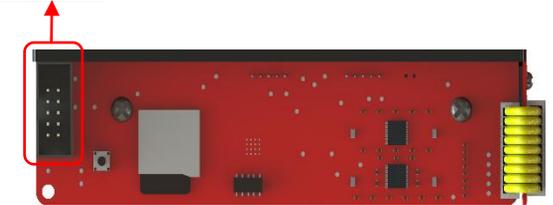- Weight: 208 g ± 5 g
- Screw Hole Diameter: 3 mm

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Electrical Parameters

Input Voltage	9 ~ 24 VDC (#9 pin)
Operating Current	< 0.15 A @9 VDC
Power	< 1 W for Average
	< 1.5 W @ Peak
Warm-up Time	3 minutes
	(Tolerance ± 50 ppm)
	60 minutes
	(Tolerance ± 20 ppm)
Output Voltage	0.4 ~ 2.0 VDC (#2 pin)
	(0.3 ~ 0.4 V for negative reading)
Warranty	18 months[*]

Connector Definition

1. NC   2. V_{out} (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 in 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)

*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.

Accessories Included

Tygon Tube
- Length 50 mm × 2
- Diameter 3.2 mm × 6.4 mm
- Polyethylene, transparent

Ribbon Cable
- Length 200 mm × 1
- 10-pin, 28 AWG, gray
- Female connector, 2 × 5
- 2.54 mm Pitch

* The heating module is not included, but can be purchased as an option.

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.

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