

NDIR CO₂ SENSOR MODULE

LARK-1 CO2 2000PPM | Order No.: 001-0801-103

DATASHEET



Applications

- Vertical profiles monitoring of greenhouse gas
- Biosphere carbon cycle monitoring
- Ambient air quality monitoring

Merits

- Low Detection Limit
- Wide Temperature Range
- Small Size
- Long Life
- Fast Response

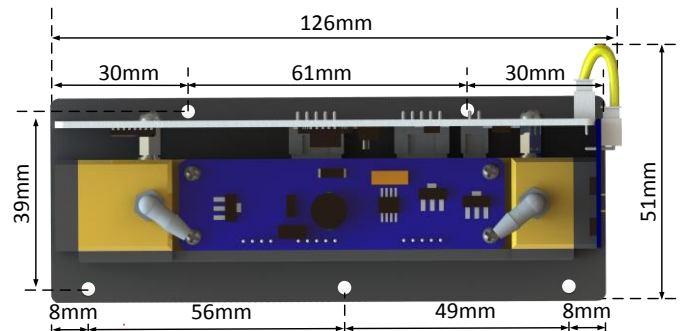
Dimensions

- Length: 126 mm ± 1 mm
- Width: 51 mm ± 1 mm
- Height: 39 mm ± 1 mm
- Weight: 208 g ± 5 g
- Screw Hole Diameter: 3 mm

Parameters

Principle	NDIR
Range	0 ~ 2000 ppm CO ₂
Sampling Mode	Pumping
Response Time	≤ 3 s (@500 ml/min)
Recovery Time	≤ 3 s (@500 ml/min)
Long-term Stability*	≤ ±100 ppm/month
Temperature	-20 °C ~ 50 °C
Tolerance	±2% FS @20 °C
Zero Temp. Drift	±100 ppm
Resolution	5 ppm
Reading Unit	ppm
Detection Limit	5 ppm

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



Mechanics

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



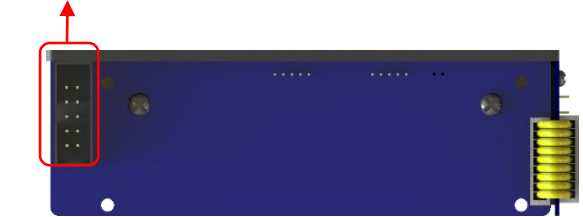
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Electrical Parameters

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 ± 100 ppm) 60 minutes (Tolerance $\pm 2\%$ FS)
Output Voltage	0.4 ~ 2.0 VDC (#2 pin) (0.3 ~ 0.4 V for Negative Reading)
Warranty	18 months*

Connector Definition

1	ALM	2	V _{out} (DAC)
3	RXD(TTL)	4	TXD(TTL)
5	RXD(RS232)	6	TXD(RS232)
7	CS1*	8	GND
9	PWR DC	10	GND



*CS1: 0-3.3 VDC Output, for RS485

Application Condition

Prefer Condition	Room Temperature, Dry, Clean
Safety	None Explosion-proof Design
Temperature	-20 °C ~ 50 °C
Humidity	0% RH ~ 85% RH (No Condensation)
Flow Rate	300 ~ 800 ml/min
Pressure	0.5 ~ 2.0 ATM (Ambient air pressure measured, without pressure compensation)

Attachment

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

*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.

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.