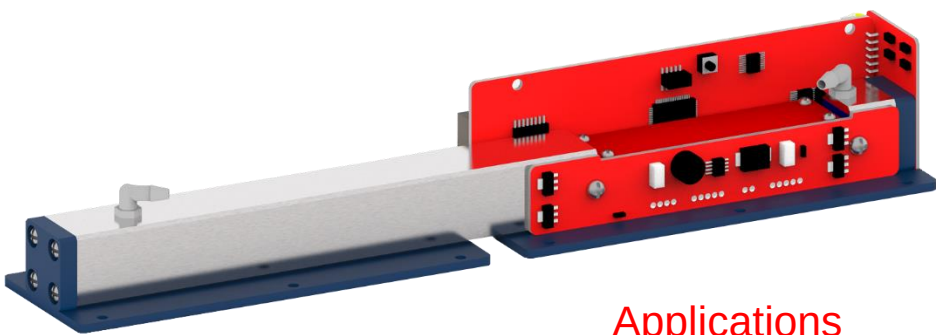


NDIR CO SENSOR MODULE

LARK-1QLM CO 50000PPM | Order No.: 001-0A02-80A

DATASHEET



Parameters

Principle	NDIR
Range	0 ~ 50000 ppm CO
Sampling Mode	Pumping
Response Time	$T_{90} \leq 12 \text{ s}$ (@500 ml/min)
Recovery Time	$RT_{90} \leq 12 \text{ s}$ (@500 ml/min)
Long-term Stability*	testing
Temperature	-20 °C ~ 50 °C
Tolerance	$\pm 15 \text{ ppm}$ (0 ~ 5000ppm) $\pm 30 \text{ ppm}$ (> 5000 ppm)
Zero Temp. Drift	Testing(can be calibrated on line)
Resolution	< 8 ppm
Reading Unit	ppb
Detection Limit	25 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

Applications

- Burning process monitoring
- Process monitoring of chemical synthesis

Merits

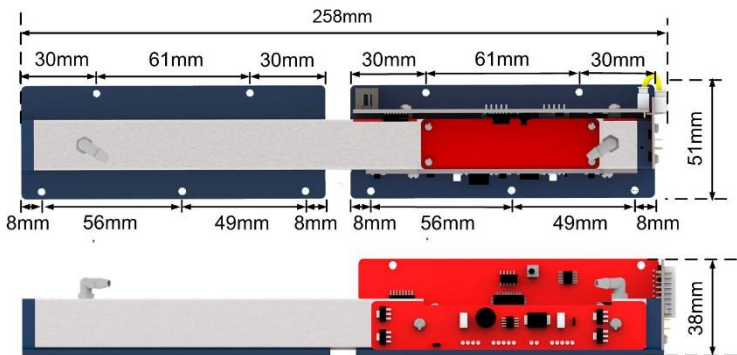
- Low zero drift
- High Resolution
- Fast response
- Long life
- High reading refresh rate

Dimensions

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

Mechanics

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

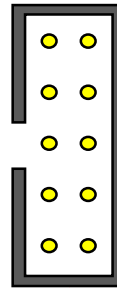


DATASHEET

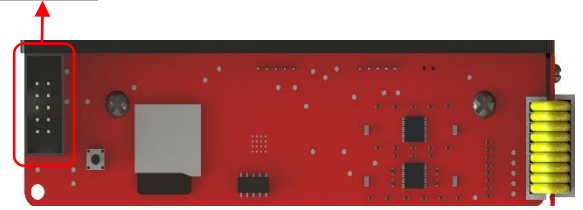
Electronics

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 $\pm$ 250 ppm) 60 minutes (Tolerance $\pm$ 30 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

Page 2 of 2