

# RK300-11 CO Sensor

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The product uses electro-chemical technology to measure CO concentration, which is fast and sensitive. It is widely used in air quality detection, smart home and other occasions where CO detection is needed. The shell has high protection level and can adapt to various harsh conditions on site.

## FEATURES

- High sensitivity gas detection probe
- Fast response
- High accuracy
- Excellent stability
- Long service life
- Digital output with temperature humidity and CO concentration 3 parameter

## SPECIFICATIONS

| Item                         | Technical Specification          |
|------------------------------|----------------------------------|
| Range(concentration)         | 0-2000ppm                        |
| Range(temperature )          | -40-+80℃ only for digital output |
| Range(humidity )             | 0-100% only for digital output   |
| Accuracy(CO concentration)   | 10%FS @25℃                       |
| Resolution(CO concentration) | 0.1ppm                           |
| Supply                       | Mark on the label                |
| Output                       | RS485, 4-20mA, 0-5V, 0-10V       |
| Power Consumption            | <50mA@24V(4-20mA)                |
| Warm Up Time                 | 3min                             |
| Response Time                | <2s                              |
| Operating Temperature        | -20℃-+60℃@15-80%RH               |
| Storage                      | -40-70℃@20%-90%RH                |
| Shell Material               | ABS                              |
| Repeatability                | <±10%FS                          |
| Zero drift                   | <10ppm                           |
| Installation                 | Wall-mounted                     |
| Dimension                    | 110*85*44mm                      |

## OUTPUT CHARACTERISTICS

### ● Current

Characteristic transfer function:

$$CO=(I-4)/(20-4)*2000(Range:0-2000ppm).$$

(where I = output current(mA))

### ● Voltage

Characteristic transfer function:

$$CO=U/( full scale voltage-zero point voltage)*2000(Range:0-2000ppm),$$

(where U = output voltage(V))

### ● RS485

If the transmission distance is over 100m, please add one 120Ω terminal matching resistance on the front end and back end of bus interface respectively.See appendix for communication protocol.

## ELECTRICAL CONNECTIONS

| Connector (cable) | RS485  |
|-------------------|--------|
| Brown             | V+     |
| Black             | V-     |
| Yellow            | RS485A |
| Blue              | RS485B |

Note: This product has been tested and complies with European CE requirements for EMC directive.

### Note:

1. All underlined is fixed bit;

2. The last two bytes is CRC check command.

## WARRANTY

This product is warranted to be free of defects in materials and construction for a period of 12 months from date of lead time.

Liability is limited to repair or replacement of defective item.

## Communication Protocol (MODBUS)

**Transmission mode:** MODBUS-RTU, **Baud rate:** 9600bps, **Data bits:** 8, **Stop bit:** 1, **Check bit:** no

**Slave address:** the factory default is 01H (set according to the need, 00H to FFH)

- The 03H Function Code Example: Read The CO Concentration

Host Scan Order(slave address: 0x01)

01 03 00 02 00 01 25CA

Slave Response

01 03 02 01 F4 BF06

CO: (01F4)H=(500)D, 500/10=50ppm

- The 06H Function Code Example: Modify the slave address

Host Scan Order (Changed 01H to 03H):

01 06 07 D0 00 03 C9 46

Slave Response:

01 06 07 D0 00 03 C9 46



Complies with applicable CE directives.

Manual subject to change without notice. Version 1.0

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