I. Introduction and Features

The integrated design of sensing and transmission is suitable for carbon dioxide measurement in indoor environment.

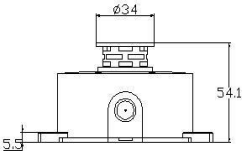
- Non-dispersive infrared light principle (NDIR) carbon dioxide sensors
- Dual Channel Carbon Dioxide Sensor
- Beautiful appearance, the lead emerges from the back or side of the shell, flexible installation.
- Stable performance and long service life

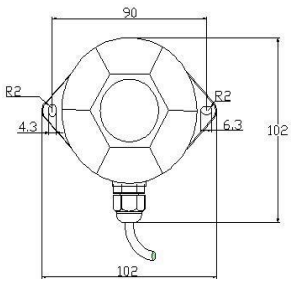
II. Technical parameters

Power supply: DC 24V（22V～26V）☐_____;
Maximum current: 80mA（DC 24V）
Measurement range：0ppm～2000ppm
☐ 0ppm～5000ppm ☐ 0ppm～10000ppm
Accuracy: ± (40 ppm +5%F-S) (25°C)
Temperature drift: ±0.2%F-S/°C
Stability: ≤2%F-S
Non-linearity: ≤1%F-S
Pressure drift: 0.13% of the reading per mmHg
Response time: ≤2min to 90% of the change
Signal refresh time: 4s
System warm-up time:≤5min(operable)
≤10min(maximum accuracy)
Operating environment: 0°C～50°C, 0%RH～95%RH (no condensation)
Output signal:
Current output type: 4mA～20mA
Voltage output type: 0V～5V/0V～10V
Network output type: RS485
Load capacity:
voltage output type: output impedance 250Ω
current output type: ≤500Ω
Installation: Wall mounting
Case:
ABS white wall-mounted type 102mm×79mm ×54mm
ABS white top-mounted type 102mm × 79mm × 74mm
Product weight: ≤ 150g

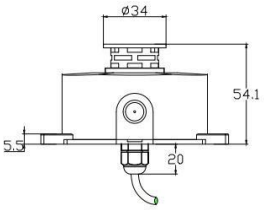
III. Shape, wiring

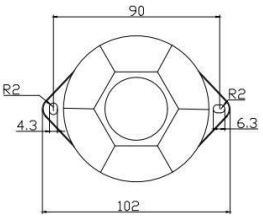
Side Outlet Form Factor：102mm×79mm×54mm

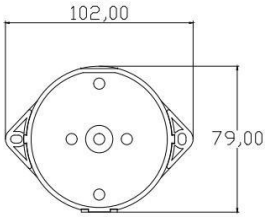




Back-out line form factor：102mm×79mm×74mm





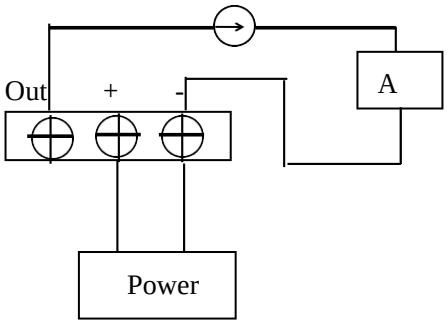


Wiring instructions: (any incorrect wiring may cause irreversible damage to the transmitter)
In the illustration A is a measuring instrument, actuator or acquisition card.

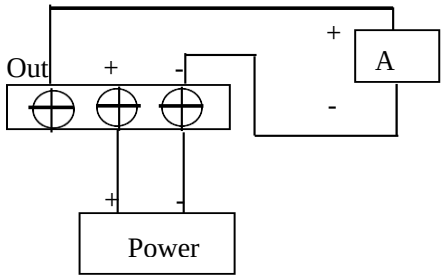
Analog Output: (JQAW-TAC/JQAW-TVB/JQAW-TVC)
Terminals JP:
V- (signal ground or power ground)
V+ (power +)
OUT (Analog output signal)

Network output: (JQAW-TW1)
Terminal JP:
V- (Power supply ground)
V+ (power-)
A+: A+ (RS485)
B-: B- (RS485)

- **Analog current output (JQAW-TAC)**

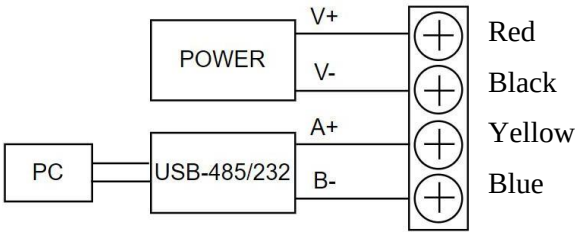


- **Analog voltage output (JQAW-TVB/JQAW-TVC)**



DC 24V

- **Network Output (JQAW-TW1)**



IV. Installation

Installation method:

1.wall mounting (recommended);

Installation steps:

1.Open the transmitter;

2.Connect the cable wires to the transmitter terminals according to the correct wiring sequence, cover the transmitter and then install the transmitter in the proper installation position.

Installation location:

1. The main requirements of the measurement of the environmental area.

Installation precautions:

1.installed in a relatively stable environment, avoid direct light, away from windows and air conditioning, heating and other equipment, avoid direct to the window, room door.

2.As far as possible from high-power interference equipment, so as not to cause inaccurate measurement, such as frequency converters, motors, etc.

V. Use

1.After checking carefully to make sure the wiring is correct, turn on the DC 24V power supply, the sensor LED flashes, and after 2min with the output CO2 corresponding hexadecimal value, the output reaches the maximum accuracy after 10min.

2.If you want to disassemble the transmitter, you must first disconnect the power supply, and then disassemble.

3.This transmitter is indoor type, avoid water entering inside the transmitter to avoid damage.

VI. Attention

1.Please read this manual carefully before use to make sure the wiring is correct. Any wrong wiring may cause irreversible damage to the transmitter.

2.avoid in easy to transfer heat and will directly prevent chemical reagents, oil, dust and other direct infringement of the sensor, do not condensation, extreme temperature environment for long-term use. Do not carry out cold or thermal shock.

3.This product is an electronic product, scrapping will produce environmental pollution, scrapping should follow the national electronic device scrapping related standards.

VII. Transportation, storage

1.Transmitter avoid vibration as much as possible, gently take and put.

2.Storage conditions: 10℃～40℃; 20%RH～50%RH.

VIII. Open box inspection

1.After opening the package, check whether the transmitter is intact.

2. Transmitter 1set
Manual 1serving
Certificate of conformity 1sheet
Package of desiccant. 1 package
expansion bolt 2 serving
screws 2 serving

IX. Troubleshooting and Analysis

1.If the transmitter output is 0, or the output value is not within the range. Please check whether the wiring is correct and firm.

2.If not the above reasons, please contact with the manufacturer.

X. Communication protocol

Complies with the standard MODBUS protocol (RTU mode).

Byte format: 8 bits of data, no parity, 1 stop bit, default baud rate 9600, address 01.

1. Master-slave method of host query and transmitter answer Data H (high byte) and data L (low byte) are Each corresponds to the data value to be queried.
Example: Read the current CO2 value of the transmitter at address 01
Request: 01 04 00 00 00 01 31 CA
Response: 01 04 02 03 78 B9 E2
0378 is a hexadecimal number where 03 is the high byte of data, 78 is the low byte, which is converted to a decimal number 888, i.e. 888ppm. Where 31 CA is the CRC check code, the low byte is in front.

2.the address and baud rate of the next command and the return value is the same that is set The setting is successful, and it will take effect only when power is reapplied. Address range is 0X01-0XF7. The change of correction value is not higher than 1000ppm.

3.Baud rate code and actual baud rate correspondence table

Baud Rate Code	3	4	5	6	7	8	9
Baud rate（kbps）	1200	2400	4800	9600	19200	38400	57600

4. Description of the query and write commands:

Inquiry Name	Memory Location Address	Sample (query or write)
Carbon Dioxide	0X0000	Read CO2 data for transmitter with address bit 01: 01040000000131CA Answer: Address + 0402 + CO2 H + CO2 L+ CRCL+ CRCH
Offset	0X0210	Read the offset operation for the transmitter with address bit 01 as: 01030210 00018477 Answer: Address+0302+Offset H+Offset L+CRCL+ CRCH Write offset: Add 500ppm offset operation to the transmitter with address bit 01: 0106021001F489A0 Answer: Address+0602+ Offset H+ Offset L+CRCL+ CRCH
Address	0X0030	Query Address: Transmitter read address operation is: FF03 00300001 91DB Answer: Address+0302+ Address H+ Address L+ CRCL+ CRCH Change transmitter address: The operation to change the transmitter address to 02 address for address bit 01 is: 01060030 00020804 Response: Address + 06 + 0030 + new address H + new address L+ CRCL+ CRCH
Baud rate	0X0031	Change transmitter baud rate: Change the baud rate of the transmitter with address bit 01 to 9600 Operation: 01060031 00060804 Answer: Address + 06 + 0031 + new baud rate code H + new baud rate code L + CRCL + CRCH