

KWC-100C Meter

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1. Introduction

This industrial online infrared CO₂ meter is a brand-new intelligent controller. The product is highly intelligent and flexible and is widely used in aquaculture, urban sewage treatment plants, electric power, water supply, medicine, chemical industry, food and other industries.

2. Feature

- Large screen display interface, eye-catching and convenient
- Digital communication function, isolation technology and strong anti-interference ability.
- Relay alarm setting function, and the hysteresis amount can be adjusted freely to avoid frequent switching of relays.
- Password management function to prevent misoperation by non-professionals
- Menu prompt function to facilitate user operation
- The 4-20mA current output optional.

3. Technical Specifications

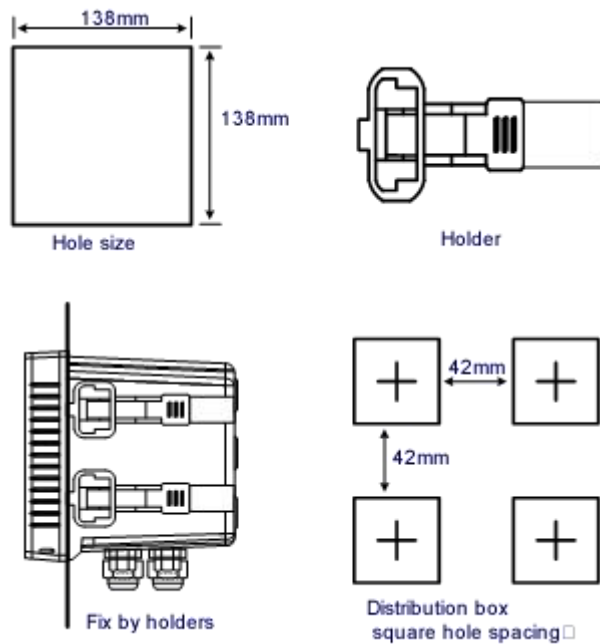
Range	CO ₂ (0-5000ppm)/or customized
Accuracy	±20ppm or ±5%FS true value, whichever is greater
Resolution	±1ppm
Signal output	RS485 isolated output. (4-20mA output optional)
Alarm output	normally open contact relay (3A/250VAC)
Power Supply	AC 220V
Power consumption	3W
Environmental conditions	Temperature 0 ~ 60 °C Humidity ≤85%RH
Dimension	144×144×115mm (height×width×depth)
Hole size	138×138mm (height×width)

4. Installation

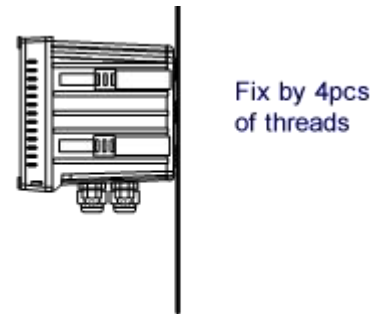
4.1 Host fixation

This transmitter can be installed in panel type or wall-mounted type.

Panel installation diagram reference drawing



Wall-mounted installation



4.2 Combination of sensor and protection tube

Before installation, please check whether the cable appearance is damaged and spread out the cables.

1. When using the immersing sensor, avoid the sensor from hitting the wall or other facilities due to water flow. If the water flow is too fast, the sensor must be fixed.
2. There should not be any obstruction in front of the measuring face. For example, the fluorescence sensor should avoid light exposure.
3. The water depth at which the sensor is installed should not exceed 2 meters from the horizontal plane, and according to water flow fluctuations, the water depth at the installation location should not be less than 30 centimeters. (Can be adjusted according to the measured water body)
4. The sensor should be installed in a location where no bubbles are generated to prevent bubbles from affecting the sensor's measurement data.
5. Do not use the sensor's own cable to hoist the sensor. Install a cable protection device to prevent the cable breaking due to the great tension between the sensors and cable.
6. The sensor should not be installed with the measuring surface facing up. It can be installed vertically downward or horizontally.
7. If you use this product in a water diversion channel, please consult the company's sales staff to confirm the specific installation requirements.

5. Sensors and electrical wiring

5.1 Sensor wiring and identification

Please refer to the sensor label:

Red: +12V, Black: GND, White: A+, Brown: B-

5.2 Backplane terminal connection

Notice:

Power supply: 220V

Power consumption: 3W

Relay: withstand voltage 240VAC, maximum current 3A.

1 NC: empty foot

2 NC: empty foot

3 NC: empty foot

4 L: Instrument working power supply 220VAC

5 N: Instrument working power supply 220VAC

6 R2: Low point alarm relay (output)

7 R2: Low point alarm relay (output)

8 R1: High point alarm relay (output)

9 R1: High point alarm relay (output)

10 NC: empty pin (or optional I-: 4-20mA current output-)

11 NC: empty pin (or optional I+: 4-20mA current output+)

12 B2: Output RS485B- (output)

13 A2: Output RS485A+ (output)

14 VO-: Output power supply- (output, connect to the negative pole of the sensor power supply)

15 VO+: Output power + (output, connect to the positive pole of the sensor power supply)

16 NC: empty foot

17 B1: Connect to sensor RS485B- (input)

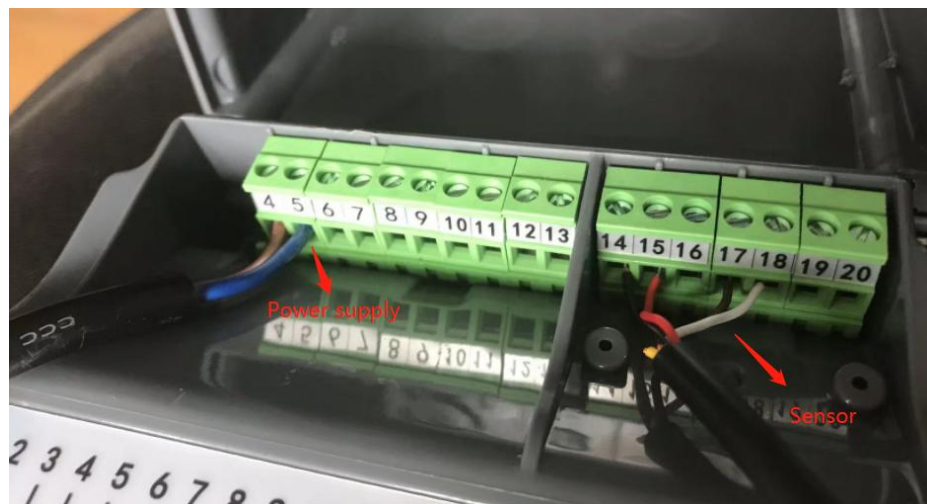
18 A1: Connect to sensor RS485A+ (input)

19 B1: Connect to sensor RS485B- (input)

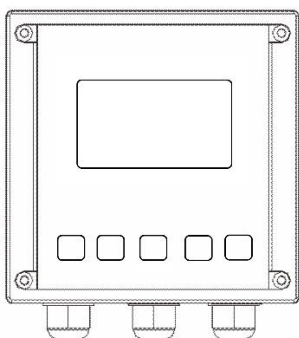
20 A1: Connect to sensor RS485A+ (input)



For example:



6. Panel introduction



6.1 Button description

In order to prevent improper operation by non-users, password protection is enabled when entering parameter settings. Each function is explained as follows:

ESC: enter/exit the setting interface

RIGHT: move the cursor to the right

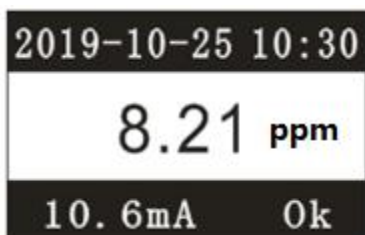
UP: switch menu items/adjust values

DOWN: switch menu items/adjust values

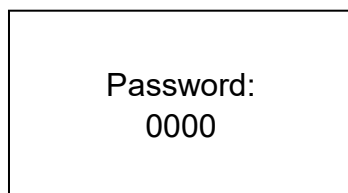
Enter: confirm after editing the instrument parameters.

6.2 Display the main interface

In the measurement mode, the main interface shows CO₂, current, time, and alarm status, see below:



Press the ESC key in the main interface to input the password:



Enter the password "1000" or "1200" to enter the setting interface.

Note: Password 1000 is a normal password and can't calibrate sensor (sensor) . Password 1200 is an administrator password and can calibrate sensor.

6.3 Operation menu introduction

The setting menu has 2 pages, see below:

1 System Config.
2 Alarm Config.
3 Sensor Config.
4 Sensor Calib.

5 Output Setup
6 Back Light
7 Language

① System setting:

The system setting parameters of the instrument include the local address number, baud rate, date, and clock settings.

Address: 1
Baud: 9600bps
D: 2023-01-01 1
T: 12:12:28

② Alarm setting:

Including alarm lower limit value L, upper limit value H, hysteresis amount setting DL

L:00000 H:05000
DL: 00005

③ Sensor setting

Including the communication address number and baud rate setting of the sensor.

1 Address: 32
2 Baud: 9600bps

④ Sensor calibration

Entering this menu requires entering the password 1200, then can calibrate CO₂ and correct error.

1 CO2 Calib.
2 Para. Correc.

a. CO2 Calib.

Select turbidity calibration and press the Enter key to enter the following interface.

1 One Point
2 Two Point
3 Online Calib.
4 Restore Factory

One-point calibration----Put the sensor into a standard solution and enter the standard solution value at the same time. After the data is stable, Confirm.

Two-point calibration----Put the sensor into two standard solutions in sequence, and enter the standard solution values at the same time. After the data is stable, Confirm respectively.

Online calibration ---- Enter this menu, input the value measured by other calibration equipment, and press Confirm.

Restore factory ---- Restore the factory parameters of the meter to the sensor calibration

b. Para. Correc.

When data deviate from reference measurements, corrections can be made to the data.

CO2: ± 0.0 ppm

⑤ **Output setting**

The output setting interface includes two options: current setting and current calibration, as below:

1 Current Setup
2 Current Calib

a. Current setting

The current setting can respectively set the upper and lower limits of the SS value corresponding to the 4mA-20mA output, as below:

Current Setup
4MA: 00000ppm
20MA: 05000ppm

b. Current calibration

Current calibration can calibrate the accuracy of 4mA and 20mA by adjusting the size of the number on the right. See below:

Current Calib
4MA: 300
20MA: 1650

⑥ **Backlight setting**

You can choose automatic off or always on.

Automatic off----When there is no button operation, the backlight will automatically turn off after 60 seconds.

Always on - the backlight is always on and will not turn off automatically.

Auto Off
Always On

7. Communication interfaces and protocols

The instrument output is RS485 communication interface, Modbus RTU protocol 03 command code.

Communication baud rate is 9600bps (adjustable), 8 data bits, 1 stop bit, no parity.

Host computer protocol: (The instrument is the slave, the host computer is the master)

Register Address	Variate	Description
40001	Reserve	/
40002	CO2*10	2 bytes, integer number
40003	Reserve	
40004	Reserve	/

8. Maintains

The water quality controller produced by our company does not require any maintenance under normal circumstances, but the supporting sensors need to be cleaned and calibrated regularly to ensure accurate and stable measurement values and to maintain normal system operation. Please refer to the sensor manual for sensor maintenance.

Note: The sensor cleaning cycle depends on the degree of contamination of the water sample. It is generally recommended to clean and calibrate the sensor at least once a week, or clean the sensor according to the sensor operating instructions and original manufacturer's recommendations.

9. Packing list:

This product contains:

1. water quality meter + sensor 1 set
2. 4 fixing clips
3. 1 copy of instruction manual

Note: The contents of the packaging list are determined according to the actual products purchased by the user.