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HVAC - R Controls & Technologies

KC-IC2

CARBON DIOXIDE TRANSMITTER (INDOOR)

PRODUCT OPERATION MANUAL



SPECIFICATIONS AND FEATURES

- The shell design is light and beautiful, with LCD backlight display.
- The sensor is oxygen-free and has a long service life.
- Adopt imported high-performance NDIR sensor.
- A variety of output methods are optional.

PRODUCT DESCRIPTION

The transmitter adopts imported high-performance NDIR sensor for CO2 concentration measurement, with rapid response and stable performance to ensure the accuracy of measurement; wide power supply range; high reliability and anti-interference ability; LCD backlight display, housing design Lightweight and beautiful, it is a powerful tool for indoor carbon dioxide measurement.

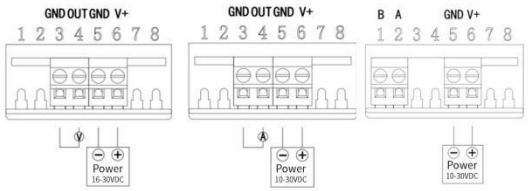
TECHNICAL PARAMETERS

Output type:	Refer label (4~20mA/0~10V/RS485 optional) (Current/voltage outputs are all three-wire)
Measuring range:	Refer label (0~2000ppm/0~5000ppm optional)
Product accuracy:	(±40ppm±3%MV)ppm
Sensor:	NDIR sensor with ABC self-calibration function
Average current:	< 45mA
Operating temperature:	0~50℃
Working humidity:	0~85%RH (no condensation)
Storage temperature:	-20~60℃
Response time (T90) :	2min
Voltage:	10~30VDC (0~10V output as 16~30VDC)
Protection class1:	IP30
Service life:	>5 Years

DESCRIPTION AND DIMENSIONS

TECHNICAL PARAMETERS

Depending on the selection, the following diagrams show the wiring methods of voltage output, current output, and RS485 output:



OUTPUT DESCRIPTION

Analog output

Example 1: if the range is 2000ppm, the output type is 0~10V, and the output is 5V, the output concentration = 5V/10V*2000ppm=1000ppm

Eaxample 2: if the range is 2000ppm,the output is 4~20mA, and the output is 12mA, then the output concentration=((12mA-4mA)/16mA) *2000ppm=1000ppm

Communication protocol (when RS485 is output)

Communication default baud rate: 9600, data bits: 8, stop bits: 1, parity: None, flow control: None

①Example of read data: the following are the read address 01 data and return data

Address	Function code	Register start address		Register length		CRC16	
01	03	00	02	00	01	25	CA

Address	Function code	Byte count	Data high 8	Data low 8	CRC16	
01	03	02	01	90	B9	B8

Description: the output concentration value =0x01*256+0x90=256+144=400ppm

②Example of writing data: write 01 to unknown address and return data as follows

Address	Function code	Register start address		Register data		CRC16	
00	06	00	05	00	01	59	DA

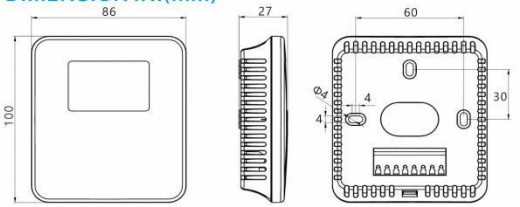
Address	Function code	Register start address		Register data		CRC16	
00	06	00	05	00	01	58	DB

Description: 0x00 is the broadcast address;
The above is to modify the unknown address sensor address to 0x013) Register Description

③Register introductions

Register add	Content	Operation	Range	Remark
0002	CO2 Concentration	Read only	0~9999	
0003	Automatic zero calibration	Write only	0~1	0 means close ABC, 1 means open ABC (ABC is turned off by default at the beginning)
0004	baud rate	read and write	0~4	1 means 2400, 2 means 4800, 0/3 represents 9600 (default 0), 4 means 19200
0005	address	read and write	0~255	00 is used when the product address is unknown

DIMENSION IN:(mm)



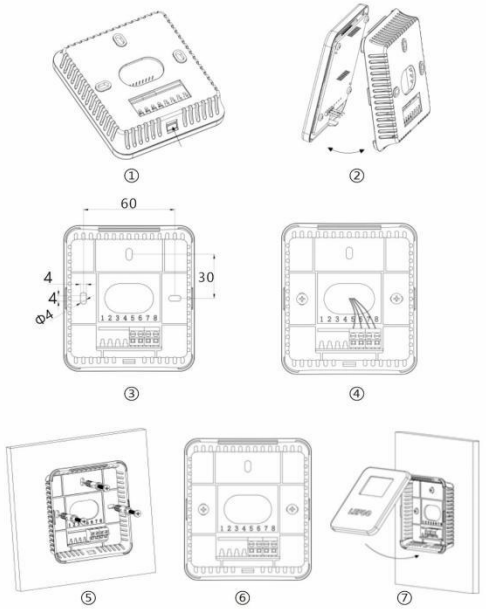
MODEL SELECTION INSTRUCTIONS

Code and description				Remark
KC-IC2	Indoor carbon dioxide transmitter			Model
1	2000ppm			Range
2	5000ppm			
V0	0~5V			Output
V10	0~10V			
A4	4~20mA			
RS	RS485/Modbus			
	D	With display		Display
	N	No display		
KC-IC2	- 1	- V10	- D	Example

NOTE:

1. Keep the transmitter away from heat sources and avoid direct sunlight.
2. Please confirm before use: whether the output voltage of the power supply is correct;Positive and negative wiring; product output wiring;
3. In normal application environment, the sensor should work continuously for at least 3 ABC cycles(ABC calibration point is 400PPM), the accuracy in the technical parameters can be achieved. especially at the beginningThe output may be inaccurate within 3 days of power-on, but after 3 ABC cycles (eachABC cycle is 8 days), the ABC self-check function will stabilize the output.

PRODUCT INSTALLATION



1. Press the open button under the back cover of the transmitter to open the transmitter (as shown in Figures 1 and 2)
2. Complete the electrical connection according to the wiring diagram, and introduce the cable from the cable hole(as shown in Figure 4)
3. Align and fasten the front cover with the bottom case to complete the installation (as shown in Figure 7).
4. There are three mounting holes on the rear cover of the transmitter, and fix it on the wall with expansion screws(as shown in Figure 5).It can also be fixed on the 86 boxes embedded in the wall with screws (as shown in Figure 6)

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